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Evidence Check

Community pharmacist prescribing outcomes in Australia and beyond

An Evidence Check rapid review brokered by the Sax Institute for the Royal Australian College of General Practitioners—June 2026.

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Contents

Abbreviations

ACCHOs: Aboriginal community-controlled health organisations

ACT: Australian Capital Territory

AF: Atrial fibrillation

AHPRA: Australian Health Practitioner Regulation Agency

AMA: Australian Medical Association

AMAQ: Australian Medical Association—Queensland branch

ANOVA: Analysis of Variance

ANZCTR: Australian New Zealand Clinical Trials Registry

CD: Contact dermatitis

COPD: Chronic obstructive pulmonary disease

CPA: Collaborative practice agreement

CV: Cardiovascular

CVD: Cardiovascular disease

CVR: Cardiovascular risk

ED: Emergency department

GP: General practitioner

GRADE: Grading of Recommendations Assessment, Development and Evaluation

HREC: Human Research Ethics Committee

JBI: Joanna Briggs Institute

MOUD: Medications for Opioid Use Disorder

N/A: Not assessable

NHMRC: National Health and Medical Research Council

NNT: Number needed to treat

NSW: New South Wales

NT: Northern Territory

OAC: Oral anticoagulation therapy

OCP: Oral contraceptive pill

OSCE: Objective Structured Clinical Examination

PICO: Patient/problem/population, Intervention, Comparison, Outcome

PRISMA: Preferred Reporting Items for Systematic reviews and Meta-Analyses

PSA: Pharmaceutical Society of Australia

Qld: Queensland

RACGP: Royal Australian College of General Practitioners

RCT: Randomised controlled trial

RR: Rapid review

SA: South Australia

STI: Sexually transmitted infection

Tas: Tasmania

UK: United Kingdom

URTI: Upper respiratory tract infection

US: United States of America

UTI: Urinary tract infection

UTIPP-Q: Urinary Tract Infection Pharmacy Pilot - Queensland

Vic: Victoria

WA: Western Australia

Executive summary

Background

Independent pharmacist prescribing in community pharmacy settings, encompassing community and retail pharmacies, has been piloted and implemented into usual care across Australia. The Royal Australian College of General Practitioners (RACGP) sought to understand the current evidence in Australia and comparable international settings, in terms of independent pharmacist prescribing outcomes within community pharmacy settings.

This two-part Evidence Check review focused on international peer-reviewed published evidence (rapid review) in component 1. Component 2 (desktop review) reviewed the grey literature about the topic in the Australian setting. The results of the Evidence Check aim to inform policy and research across Australia.

Researchers from the Leeder Centre for Health Policy, Economics and Data (University of Sydney) were contracted to undertake the rapid and desktop literature review to address the questions below. It was not within the scope of this Evidence Check to take a position for or against current policy related to independent pharmacist prescribing in community pharmacy settings in Australia.

Evidence Check questions

The review questions posed were as follows.

Component 1— international peer-reviewed evidence:

1. How safe are implemented models of autonomous pharmacy prescribing and what are their effects on patient outcomes, continuity of care, GP sustainability and clinical governance?
2. What opportunities and risks of implementing autonomous pharmacy prescribing models have been explored nationally and internationally?
3. Among models for autonomous pharmacy prescribing practices, what are the types of education and training standards, registration requirements and the different medicines scheduling systems described?
4. What are the limitations and gaps in the existing literature?
5. What are the implications of the findings?

Component 2—grey literature, Australian setting:

1. Have the pilots and trials in Appendix 1 of the research protocol (Appendix 5 of the final report) received ethics committee approval in accordance with the National Statement on Ethical Conduct in Human Research?[1]
2. What were the aims, scope, governance and monitoring mechanisms of the trials and pilots in Appendix 1 of the research protocol (Appendix 5 of the final report)?
3. How do the Appendix 1 pilots and trials in the research protocol (Appendix 5 of the final report) compare with international best practices for human research?
4. Does the existing evidence support the use of autonomous pharmacy prescribing for the ailments and chronic conditions listed in Appendix 2 of the research protocol (Appendix 6 of the final report)?
5. What are the limitations and gaps in the existing literature?
6. What are the implications of the findings?

Summary of methods

In component 1 we conducted a rapid review of peer-reviewed studies (2021–2026) using four databases—MEDLINE, Embase, Scopus and CINAHL. We included studies conducted in all high-income countries. We captured research that used study designs most appropriate for evaluating quantitative outcomes of independent pharmacist prescribing. We focused on studies relating to independent pharmacist prescribing in community pharmacy settings and included any quantitative outcome—including process outcomes (e.g. number of prescriptions), clinical outcomes, health system outcomes (including economic outcomes) and safety outcomes. This excluded survey or interview-based outcomes from prescribers and patients. We assessed the quality of the studies using JBI critical appraisal tools.

In component 2, we conducted a grey literature review of publicly available materials related to independent pharmacist prescribing in community pharmacies in the Australian setting. This included information available on websites, protocol documents, legislative documents and evaluation reports. From this, we mapped the current status of independent pharmacist prescribing in each state and territory, and any associated evaluations. Similar to component 1, we summarised the quantitative outcomes of these evaluations and critically appraised the evaluations, where appropriate.

Key findings—component 1

- **18 studies included in the rapid review of international research**

In component 1, we included a total of 18 peer-reviewed primary research studies published within the past five years, which was consistent with the time frame of the rapid review. These studies focused on outcomes of independent pharmacist prescribing in community pharmacy settings, with 10 studies from the US, seven from Canada and one from the UK. The clinical conditions reported and type of effectiveness outcomes reported are summarised below. Safety outcomes were reported in two studies.

Figure A1—Chart of clinical conditions reported

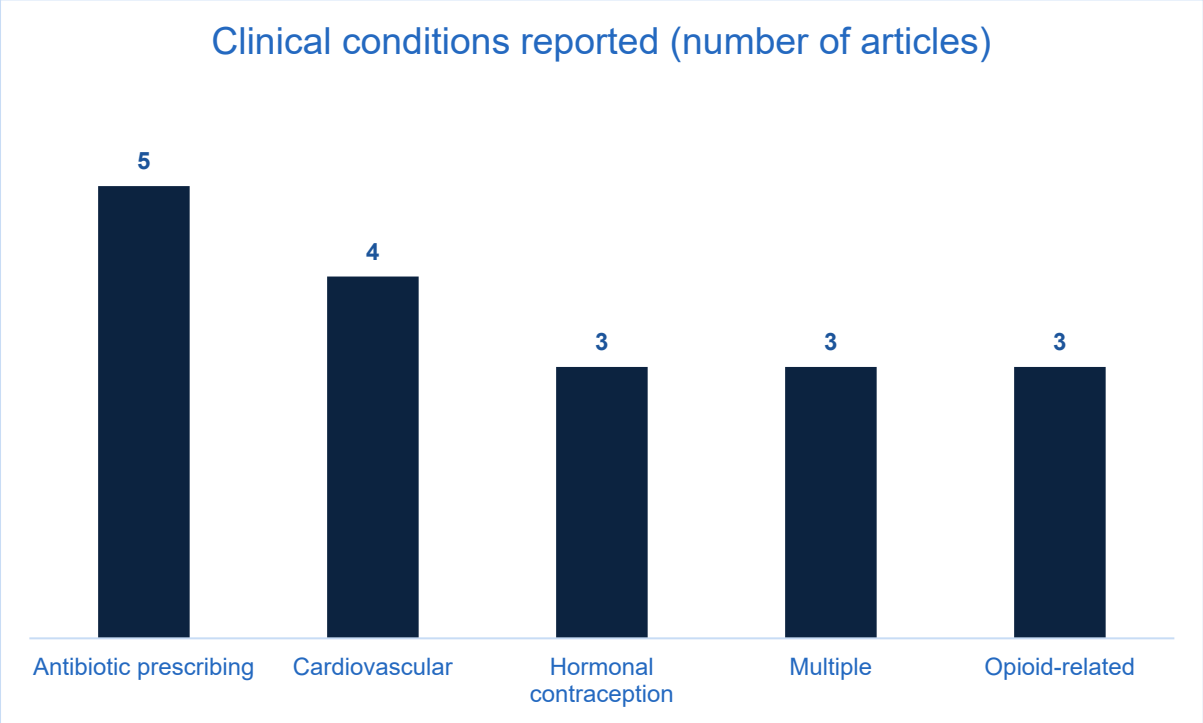
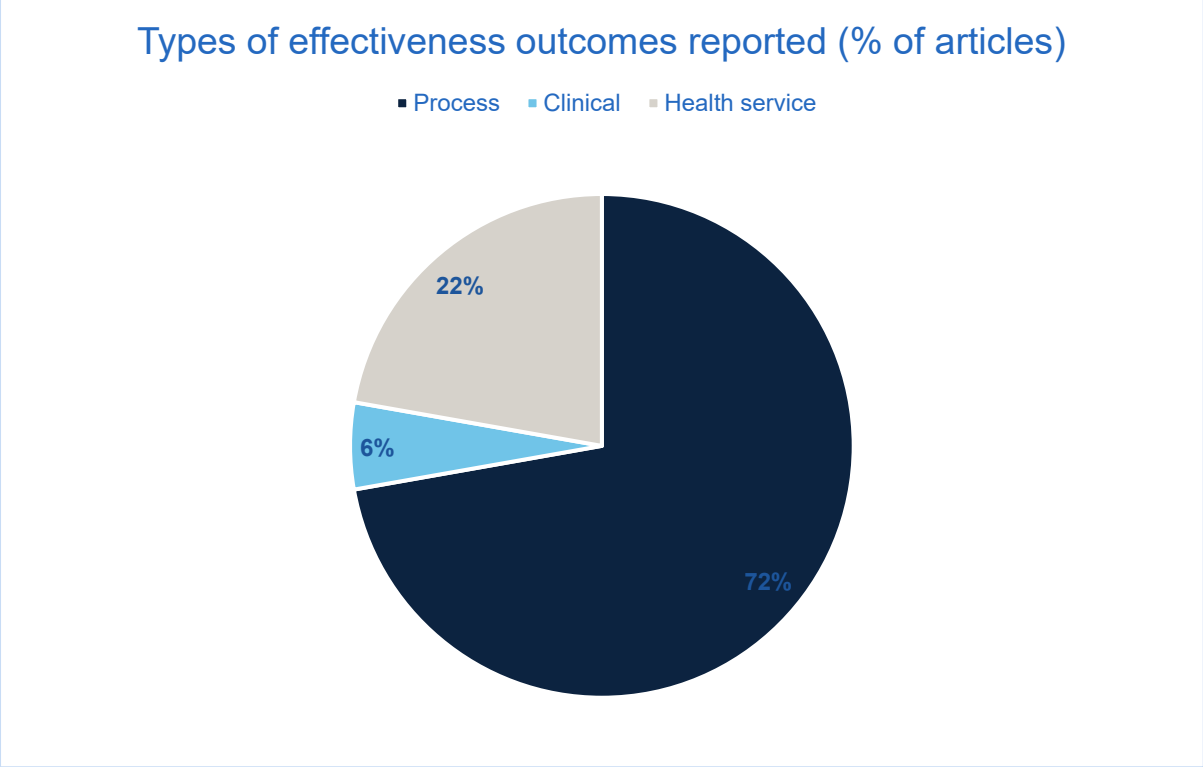


Figure A2—Chart of effectiveness outcomes reported



- **Improved access with limited evidence for other outcomes**

In general, the included studies describe increases in medication prescriptions as a result of independent pharmacist prescribing policies. There is limited evidence of some improvements in process outcomes, such as guideline-concordant prescribing. For other outcomes, the evidence is uncertain because of predominantly observational study designs and limited types of outcomes reported. Few studies investigated clinical, health service or safety outcomes.

- **Weak evidence with issues highlighted in critical appraisal**

The National Health and Medical Research Council (NHMRC) levels of evidence were used to rank the strength of evidence. There was only one randomised controlled trial (RCT), which was ranked level II. All other studies (N=17) were lower levels of evidence (level III to IV studies). This means there is some, but weak evidence from which to draw reliable conclusions. The study types and issues highlighted in critical appraisal are summarised in the table below.

Table A1—Issues highlighted from critical appraisal

Study type	Issues highlighted in critical appraisal
RCT (N=1)[2]	Open-labelled, however this could be considered appropriate for this type of health service research where blinding of pharmacists and participants would not be possible.
Economic (N=1)[3]	Cost minimisation study design, which does not establish clinical effectiveness; some costs or assumptions were not well justified (e.g. proportion of URTI presentations to ED).
Quasi-experimental (N=7)[4-10]	Provides valuable real-world evidence, and in some cases used large datasets and appropriate study designs. However, the frequent use of pre–post or non-randomised study designs without equivalent control groups, limited adjustment for confounders, incomplete reporting of follow-up or missing data, and reliance on descriptive or weakly adjusted analyses, all increase the risk of bias.
Cohort (N=6)[11-16]	Useful for describing real-world service implementation using objective data sources, with some analytical methods applied. However, predominantly single-cohort descriptive studies without comparators. Similarly to the quasi-experimental studies, there was limited adjustment for confounding factors, incomplete

	reporting of follow-up or missing data, and analyses were largely descriptive.
Cross-sectional (N=3)[17-19]	Enables descriptive insights using administrative or survey data, with some studies applying robust measurement and modelling. Similar to the other study categories, reliance on mainly descriptive analyses with minimal adjustment for confounding, and risk of selection and recall bias because of self-reported data were issues.

Key findings—component 2

- **122 documents reviewed in the grey literature review of Australian initiatives**

In component 2, we included a total of 122 Australian-based grey literature documents. Following commencement of the Queensland UTI trial in 2020, community pharmacist prescribing initiatives have seen a rapid increase in scope in terms of conditions covered. As of 2026, all jurisdictions have announced rollout of community pharmacist prescribing for common and minor conditions—approximately 20 conditions per jurisdiction in total (exact number of conditions varies between jurisdictions), with most conditions based on the list of conditions piloted in Queensland.

- **Status of Australian evaluations by jurisdiction**

Of the eight states and territories in Australia, publicly available evaluations were available only for Queensland and Victoria at the time of writing (29 May 2026). The scope of the evaluations was narrow relative to the full range of common/minor conditions implemented in usual care. It should be noted, however, that the evaluation of the NSW Pharmacy Trial of pharmacist prescribing for the treatment of uncomplicated urinary tract infections (UTIs) and resupply of oral contraceptive pills (OCPs) was released in early June 2026[20] after submission of the draft Evidence Check report, and was therefore not included in this final report.

Table A2—Status of evaluations by jurisdiction

State	Evaluation status	Report available?
ACT	Incomplete— part of NSW Pharmacy Trial	No
NSW*	Incomplete— NSW Pharmacy Trial under way	No

NT	None described	No
Qld	Incomplete—UTI evaluation finalised but other components ongoing	Yes, for UTI, not for other conditions
SA	None described	No
Tas	None described	No
Vic	Unclear—unclear if other conditions will be evaluated	Yes, for pilot conditions (resupply OCP, UTI, skin conditions), unclear for others
WA	None described	No

*Table is accurate at time of writing (29 May 2026). Note, however, that the evaluation of the NSW Pharmacy Trial of pharmacist prescribing for UTI and resupply of OCP became available in early June 2026 after submission of the draft Evidence Check report and was not included in this final report.

ACT, Australian Capital Territory; NSW, New South Wales; NT, Northern Territory; Qld, Queensland; SA, South Australia; Tas, Tasmania; Vic, Victoria; WA, Western Australia

- **Main findings from Queensland and Victorian evaluations**

The Queensland UTI pilot evaluation reported process outcomes in terms of proportion of patients with an initial consult receiving antibiotics (96.6%) and guideline concordance (93.0%). Clinical and safety outcomes were reported in this evaluation but were limited by large numbers of patients lost to follow-up and potential bias in self-reported outcomes. Of the N=2973 (29%) patients followed up, UTI symptoms resolved in 87.6%, N=5 had ED or hospital visits at follow-up and N=85 had adverse events reported.

The Victorian evaluation focused on three pilot conditions and reported limited quantitative outcomes. Process outcomes were described in terms of number of services delivered: N=10,680 UTI, N=6316 OCP resupply, N=231 mild skin conditions. The report also described that 93% of patients received care within 24 hours. No clinical or health service outcomes were reported. Evaluation of adverse events was limited, with the report stating there were no adverse patient safety events resulting in serious harm or death—these were raised through complaints or audit checks only.

- **Weak evidence to draw reliable conclusions**

Using the NHMRC levels of evidence tables, both the Queensland and Victorian evaluations are considered level IV evidence, which are observational studies without a comparator. This means there is some, but weak evidence from which to draw reliable conclusions.

Implications

- **Opportunity and uncertainties**

There is an opportunity to improve access to medications through independent pharmacist prescribing in community pharmacy settings compared with the status quo, but substantial uncertainties exist both in international research and Australian grey literature in terms of clinical effectiveness, safety and health service implications.

- **Limited evidence for the Australian setting**

There is limited evidence to inform the development of robust policy relating to independent pharmacist prescribing in community pharmacy settings in Australia. Evaluation outcomes have been reported internationally but are not sufficient to cite as evidence for positive effectiveness or safety outcomes of independent pharmacist prescribing in community pharmacies in Australia. This is because of weak study designs, limited number of conditions evaluated, limited health settings in which evaluations took place, and limited types of outcomes evaluated.

- **Transparent reporting required**

States and territories across Australia have implemented independent pharmacist prescribing in community pharmacy settings before public evaluation findings were fully available. At the time of writing, only Queensland and Victoria had publicly available evaluations for a limited number of conditions. Transparent conduct and reporting of evaluations are particularly relevant in the context of ongoing policy and professional debate.

- **Robust evaluations of wider scope required**

Evaluations alongside implementation of independent pharmacist prescribing interventions in community pharmacies in Australia should include study designs with a control group (e.g. RCT or quasi-experimental studies—pre–post with a control group), and key outcomes including clinical, health service (including costs) and safety outcomes. These high-quality evaluations would be important to conduct for a range of conditions implemented, and such evidence would contribute meaningfully to international evidence.

Conclusion

In recent years, independent pharmacist prescribing in community pharmacy settings has increasingly been implemented into usual care across Australia and comparable international settings. As of 2026, all states and territories in Australia have announced or have started to roll out community pharmacist prescribing for a wide range of common and minor conditions.

While there is good evidence that pharmacist prescribing improves medication access, both international research and Australia-based evaluations are limited in terms of the number of evaluations conducted with quantitative outcomes. Of the small number of studies available within the past five years, most are based on weak study designs and report no clinical, health service (including economic) or safety outcomes. Furthermore, existing evaluations have targeted a limited set of conditions, the results of which may not apply more broadly to a wide range of common and minor conditions.

In Australia and internationally, there remains a need and opportunity for well-designed evaluations of quantitative outcomes, including a range of conditions, alongside the implementation of independent

pharmacist prescribing policies. Transparent reporting of these outcomes will be important to ensure safe, high-quality patient care and positive health system outcomes in the future.

Introduction

Definitions of independent pharmacist prescribing

Independent pharmacist prescribing refers to models of care where a pharmacist is legally authorised under relevant national and/or jurisdictional legal and regulatory frameworks to independently undertake patient assessment (and, where relevant, diagnosis), initiate and supply medicine categorised as prescription-only medicine, and manage treatment without requiring prior consultation or prescription from a medical practitioner or other authorised prescriber such as a nurse practitioner. In the context of this Evidence Check, the focus is on autonomous or independent prescribing delivered in community pharmacy settings, encompassing both community and retail pharmacies, typically under structured protocols or approved clinical pathways. This focus excludes collaborative or supplementary prescribing models, where prescribing occurs under the direction of, or in partnership with, a medical practitioner or other authorised prescriber. Non-prescribing pharmacist services, such as medication reviews, counselling, screening, or pharmacist prescribing roles within multidisciplinary teams (e.g. in general practice or hospital settings) are also excluded.

Background in Australia and beyond

Internationally, pharmacist prescribing has evolved over several decades, with early adoption in the UK, parts of Canada and the US, through both collaborative and independent prescribing frameworks.[21-23] More recently policy attention has shifted towards independent prescribing for common acute and chronic conditions in the community pharmacy[24], reflecting broader health system goals to improve access to medications and efficient treatment pathways. Scoping reviews[24-26] indicate integration of pharmacist prescribing into primary care systems, particularly for minor ailments, hormonal contraception and chronic disease management. The evidence base demonstrates gradual expansion beyond structured protocol prescribing towards more autonomous decision-making roles for pharmacists in some jurisdictions.[24, 25]

In Australia, however, independent pharmacist prescribing is comparatively recent and has largely been implemented through state- and territory-based pilots and trials, including initiatives targeting uncomplicated urinary tract infections, hormonal contraception, dermatological conditions and selected chronic disease management programs. These programs vary substantially in scope, training requirements, governance arrangements and medicines included, reflecting a potentially fragmented and evolving policy landscape.

Evidence and gaps

The expansion of independent pharmacist prescribing is occurring within a contested policy environment. Proponents emphasise the potential for these prescribing models to improve timely access to care, particularly for common and low risk/uncomplicated conditions, reduce pressure on general practice and emergency departments, and improve patient convenience. Evidence from the Cochrane Review by Weeks et al. (2016)[27] suggests non-medical prescribing, including pharmacist prescribing, can achieve clinical outcomes broadly comparable to those of medical prescribing across a range of acute and chronic conditions, although the certainty of evidence varied and was often limited by study design heterogeneity. Emerging international evidence suggests pharmacist prescribing may improve access to medications and reduce delays in treatment initiation, with potential system efficiencies.[28] Broader evidence about pharmacy-delivered services, including independent prescribing, suggests well-designed interventions can achieve positive clinical outcomes under controlled conditions.[29] However, concerns remain regarding patient safety, appropriateness of prescribing and continuity of care, particularly when communication with the patient's usual general practitioner is limited.[30, 31] Additional concerns relate to clinical governance, conflicts of interest (e.g. when prescribing and dispensing are co-located), risks of overprescribing and potential fragmentation of care across the primary care system.[30-32]

Recent reviews have examined independent pharmacist prescribing and provide valuable insights into implementation models, facilitators and barriers, and the breadth of conditions managed. However, important gaps remain. Two of these scoping reviews[25, 26] focus on describing models of care, implementation contexts and the range of conditions managed, while another[24] explores integration into practice and workforce perspectives. A recent rapid overview of reviews by Ali et al. (2026)[33] highlights substantial variability in the outcomes used to evaluate pharmacist prescribing, identifying a broad range of clinical, process and system-level measures; it also notes a lack of standardisation and limited reporting of key outcomes that reflect the value of pharmacist prescribing. Outcomes such as patient clinical outcomes, safety, prescribing appropriateness and economic impact would fall within this scope. This heterogeneity complicates comparison across studies and limits the ability to draw firm conclusions about the effectiveness and value of pharmacist prescribing. Furthermore, much of the existing literature combines different prescribing models (independent and supplementary) and settings, reducing direct applicability to autonomous pharmacist prescribing models in the community pharmacy. While the Cochrane review by Weeks et al. (2016)[27] provides higher-level evidence about comparative effectiveness, it combines nurse and pharmacist prescribing models; and it does not specifically address contemporary autonomous pharmacist prescribing models in community pharmacy settings or their associated system-level implications.

Rationale and scope of this Evidence Check

Given the rapid pace of policy change for pharmacist prescribing in community pharmacies in Australia and the evolving nature of the evidence base, a targeted Evidence Check is required to inform decision making. Evidence Check reviews are designed to synthesise recent and policy-relevant primary evidence within constrained time frames, while critically appraising the methodological quality, robustness and applicability of that evidence. This approach is also suited to

contexts such as independent pharmacist prescribing in Australia, where evidence is emerging, heterogeneous, and closely linked to ongoing pilot and trial activity.

In line with the commissioning agency's priorities, this Evidence Check places particular emphasis on quantitative and economic outcomes. Specifically, it focuses on measurable indicators including patient safety (e.g. adverse events), clinical effectiveness, appropriateness of prescribing, continuity of care and information sharing, and impacts on the broader primary care system, including implications for general practice sustainability. Economic outcomes, such as cost-effectiveness, resource utilisation, and impacts on healthcare demand are also a focus, given their importance for policy and funding decisions. By prioritising this quantitative evidence and economic evaluations, the Evidence Check seeks to address key limitations identified from the existing literature reviews, and provide a more policy-relevant assessment of benefits, risks and system implications of independent pharmacist prescribing in the Australian community pharmacy context.

Methods—component 1

Aims and scope of the study

We conducted a targeted rapid review of the peer-reviewed literature to answer the following research questions. The protocol of this Evidence Check was developed by the Leeder Centre research team, in consultation with the Royal Australian College of General Practitioners (RACGP) and Sax Institute. Reporting of this rapid review adheres to guidelines as per 2020 PRISMA for systematic reviews[34] and interim guidance for PRISMA rapid reviews (PRISMA-RR).[35]

Research questions

1. How safe are implemented models of autonomous pharmacy prescribing and what are their effects on patient outcomes, continuity of care, GP sustainability and clinical governance?
2. What opportunities and risks of implementing autonomous pharmacy prescribing models have been explored nationally and internationally?
3. Among models for autonomous pharmacy prescribing practices, what are the types of education and training standards, registration requirements and the different medicines scheduling systems described?
4. What are the limitations and gaps in the existing literature?
5. What are the implications of the findings?

Eligibility criteria

Detailed inclusion and exclusion criteria are provided in Table 1. In summary, we included English-language studies from 2021–2026 (five-year time frame, which is in line with shorter time lines included in rapid reviews[35]). Study designs of interest included primary research studies—including randomised controlled trials, quasi-experimental studies, observational studies and economic evaluations. Observational studies were included where there was a longitudinal time component. This included cross-sectional studies with repeated cross-sections, and prospective or retrospective cohort studies. Exclusions included survey-based studies, qualitative studies and non-primary research articles such as commentaries, opinion pieces and conference abstracts.

In terms of PICO (patient/problem/population, intervention, comparison, outcome) inclusions and exclusions, our population of interest was patients receiving pharmacist prescribing in the community pharmacy setting. For comparability with Australia, we included patients in high-income countries as defined by the World Bank.[36] Intervention of interest was studies with a component of independent pharmacist prescribing, including studies with a component of independent pharmacist prescribing

alongside other types of interventions. The comparator could be a control group or pre-intervention comparator and studies without a comparator were also included. Outcomes included any relevant process outcomes, such as prescribing rates, clinical outcomes, health service outcomes such as impact on continuity of care, safety and adverse outcomes, and economic outcomes. Given the diversity of conditions and possible outcomes, we took a broad and inclusive approach and did not exclude studies based on outcomes reported. However, we targeted data extraction towards quantitative outcomes of interest—for example, where the evaluation was mixed methods, we did not report survey or interview-based data.

Table 1—Detailed inclusion and exclusion criteria

Included	Excluded
Study characteristics	
English language, primary studies published between 2021 and 2026.	Non-English language, primary studies older than five years.
Study design	
Primary studies: randomised controlled trials, quasi-experimental, cohort studies, cross-sectional studies with longitudinal component, economic evaluations.	Case reports, case series, cross-sectional studies with single time points (e.g. surveys), qualitative studies. Non-primary research articles, including systematic reviews, protocols, abstracts with no full text, commentaries/opinion pieces.
Population (P)	
Patients receiving care under independent pharmacist prescribing models in community/retail pharmacy settings.	Settings excluded: Hospital-based services; pharmacists embedded in general practice, aged care, ACCHOs or other multidisciplinary settings where a medical practitioner is present and shared medical records are routinely used. Studies limited to pharmacist attitudes/ knowledge/training.
Intervention / model (I)	
Independent pharmacist prescribing: assessment (and diagnosis where applicable)	Non-prescribing interventions (e.g. counselling only; medicines reviews only; immunisations

and supply of prescription-only medicines—e.g. under an approved pathway/protocol.	only). Collaborative/supplementary prescribing models that are not autonomous.
Comparator (C)	
Usual care (e.g. GP-led prescribing) or alternative models where a comparator is reported.	None—studies without comparators were not excluded.
Outcomes of interest (O)	
Any relevant process outcome, clinical outcome, health service outcome, safety outcome or economic outcome. Safety/adverse events; prescribing appropriateness; clinical outcomes; economic outcomes; continuity of care/information sharing; impacts on general practice sustainability; clinical governance/system impacts; risks/opportunities/unintended consequences.	None—studies of other outcomes were not excluded.

Search strategy

We searched four databases of peer-reviewed literature on 14 April 2026 that were considered most relevant to pharmacist prescribing:

- MEDLINE: MeSH (Medical Subject Headings) search terms and keyword search
- Embase: Emtree medical subject headings search terms and keyword search
- Scopus: Keyword only search
- CINAHL: CINAHL subject heading search terms and keyword search.

In accordance with PRISMA 2020 guidelines, we implemented a comprehensive and reproducible search strategy across all four electronic databases. The format of the search strategy is outlined in Table 2 and includes illustrative examples of keywords (column 2) considered and organised within three predefined conceptual categories (column 1). The keywords across the categories were used to derive the full set of search terms, including both controlled vocabulary (e.g. subject headings) and free-text keywords, and to construct database-specific search strings for implementation across the specified databases. Keywords and search terms were informed by a recent umbrella review of pharmacist prescribing reviews.[33] Typically, search strategies use the four category patient/problem/population, intervention, comparison, outcome (PICO) model[37, 38]; however, because of the lower than anticipated number of results, the rapid review addressed the outcome category

during the screening stages, rather than within the search strategies. Grey literature was not included in component 1, as component 2 focused on reviewing Australian-based grey literature for the topic. Details of the full search strategy and results are included in Appendix 1.

Table 2—Search strategy format

Domain	Key words
Population	e.g. Pharmacist prescriber, pharmacist prescribing
Intervention	e.g. Independent prescriber, autonomous prescribing, non-medical prescribing, minor ailments
Setting	e.g. Community pharmacy, retail pharmacy
Combine the three main concepts	e.g. Population + Intervention + Settings
Limits or exclusions	Exclusions: e.g. Hospital, in-patient Limits: e.g. Last 5 years, English language, human studies

Selection process

All articles were de-duplicated and imported into Covidence. Title and abstract screening, and full-text screening, were conducted by two independent reviewers (RR, AN, WC) against the inclusion and exclusion criteria in Table 1. To ensure the comprehensive capture of articles of interest, studies were moved from title and abstract screening into full-text screening if one or more reviewers flagged the study for potential inclusion. A third reviewer (KH) resolved any conflicts at full-text screening.

Data extraction

Data was extracted into a standardised data extraction form by a single reviewer and checked for accuracy by a second reviewer. A third reviewer resolved any conflicts.

Quality appraisal and strength of evidence

The methodological quality of included studies was appraised using JBI critical appraisal tools relevant for the article study type[39-44]—including the 2017 checklists for RCTs, quasi-experimental studies, cohort studies, cross-sectional studies and economic evaluations (Appendix 2). Critical appraisal was conducted by two independent reviewers (RR, AN) and any conflicts were resolved by a third reviewer (KH).

Each included study was classified by study design according to NHMRC levels of evidence (Table 3).[45, 46] A GRADE approach[47] was outlined in the initial protocol to assess the overall certainty of

evidence. However, this was not deemed appropriate given the limited number of studies with meaningful outcomes for synthesis and comparison.

Table 3—NHMRC levels of evidence

Level of evidence	Study design
I	A systematic review of Level II studies
II	A randomised controlled trial
III-1	A pseudo-randomised trial (i.e. alternate allocation or some other method)
III-2	A comparative study with concurrent controls (i.e. non-randomised experimental trials, cohort studies, case-control studies, interrupted time series studies with a control group)
III-3	A comparative study without concurrent controls (i.e. historical control study, two or more single arm studies, interrupted time series studies without a parallel control group)
IV	Case series with either post–test or pre–test/post–test outcomes

Data synthesis

The data extraction table in component 1 was mapped to address the component's research questions (Q1–Q5). A narrative synthesis consistent with established rapid review methods[48] was conducted on the extracted data.

Results—component 1

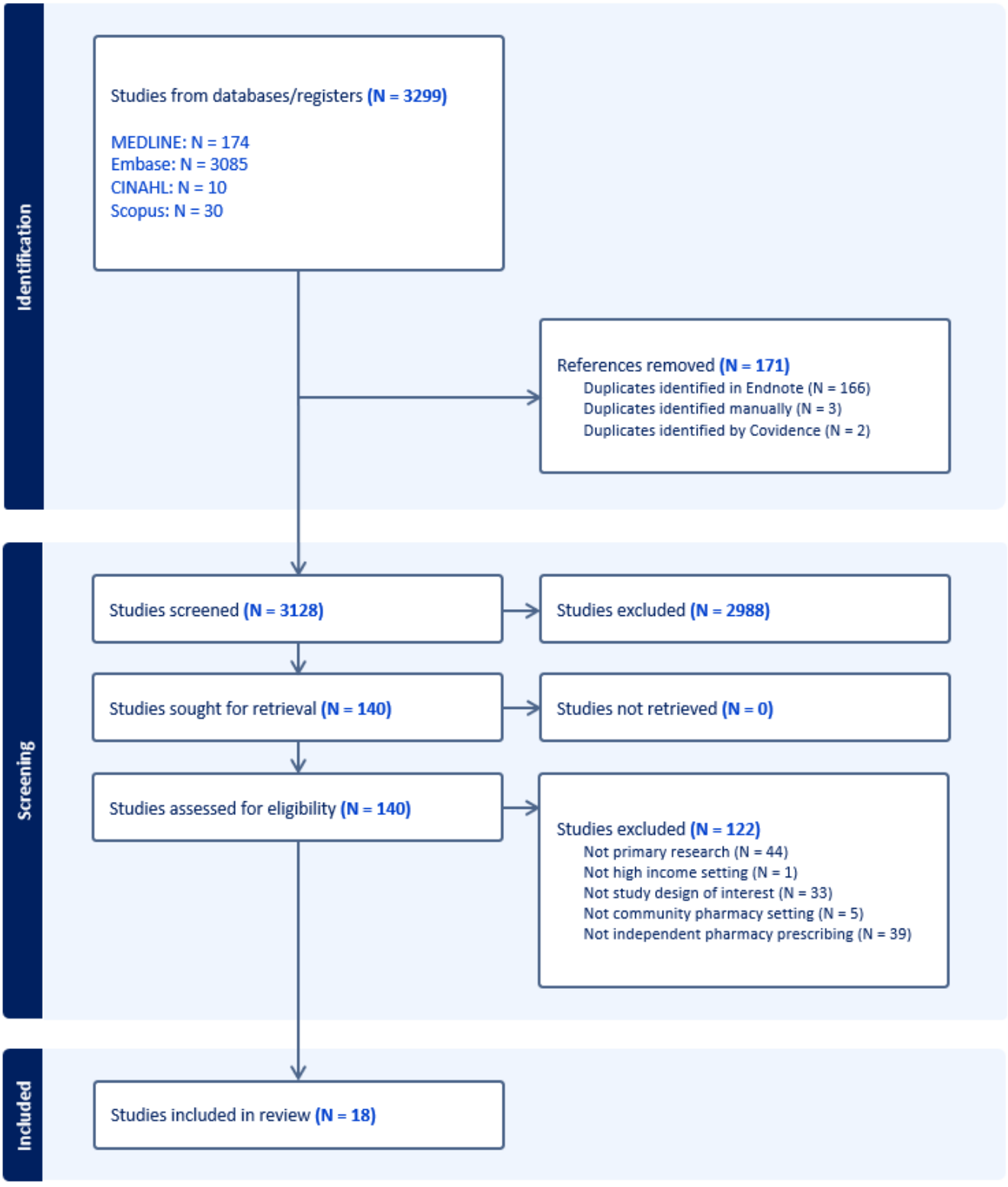
Included studies

The search strategy identified N=3299 articles from the four databases searched. See Figure 1 for the flow chart of included studies and Appendix 1 for full search results from the four databases.

The search results were refined to N=3128 articles after de-duplication. Articles on the topic of independent pharmacist prescribing were excluded at the title and abstract screening stage primarily because of lack of relevant study design, or the studies were conducted outside of community pharmacy settings within high-income countries. For example, these included opinion pieces on pharmacist prescribing, or surveys and interviews of both pharmacists and patients about views towards independent pharmacist prescribing.

The full-text screening included N=140 studies. Reasons for exclusion at this stage related mainly to the article not being a primary research article, including conference abstracts (N=44); no independent pharmacist prescribing described (N=39); the study not having a study design of interest (N=33). N=18 studies focusing on independent pharmacist prescribing in community pharmacy settings published within the past five years were included for data extraction.

Figure 1—Flow chart of included studies for component 1



Study characteristics

Countries and settings

The characteristics of the N=18 studies included for data extraction are outlined in Table 4. All were conducted in the community pharmacy setting. The majority of studies were conducted in the US (N=10) and Canada (N=7). There was one study included from the UK, and no studies from Australia. In component 2, we noted there was a peer-reviewed publication of independent pharmacist prescribing for UTI management in Queensland, which was published within the time frame of the rapid review.[49] However, this study did not include independent pharmacist prescribing or related terminology in its title and abstract (criteria for inclusion for component 1 rapid review) and was therefore only analysed in component 2. We also note that five of the 10 studies from the US reported that pharmacist prescribing in the community pharmacy setting was legislated through Collaborative Practice Agreements (CPAs). Although collaborative prescribing models were excluded from this Evidence Check, these studies were included because the described CPAs enabled a structured form of independent pharmacist prescribing for specified conditions within defined population-level criteria, rather than requiring physician authorisation on a case-by-case basis for individual patients.[50]

Study designs

The most common type of study design was observational studies (N=9), including prospective and retrospective cohort studies, and cross-sectional studies. These study types did not have a separate control group. There were several quasi-experimental studies (N=7), which included interrupted time series and pre–post studies with or without a control. There was a single RCT and a single modelled economic evaluation with no primary data.

Clinical conditions

The clinical focus areas varied widely. The most common focus was antibiotic prescribing (N=5), which included antibiotic prescribing for bacterial upper respiratory tract infections (URTIs), urinary tract infections (UTIs) and Lyme disease chemoprophylaxis. Other articles focused on cardiovascular diseases or cardiovascular risk reduction, hormonal contraception and medications related to opioid use, including naloxone and buprenorphine. Three articles included a range of common and minor ailments that did not fall exclusively into one of the above clinical areas. These typically evaluated a select number of conditions out of a large number of common and minor ailments.

Types of outcomes reported

The majority of studies reported process outcomes (N=13). These included N=9 studies that only reported descriptive counts on number of prescriptions, without other types of outcomes. Other types of process outcomes evaluated included adherence to guidelines and time to initiating appropriate treatment. One study reported clinical outcomes in terms of cardiovascular risk reduction. Several studies reported health service outcomes such as GP and/or ED attendance for the cohort that received independent pharmacist prescribing interventions. There was a single study that reported

safety and/or adverse events quantitatively and one other study that reported treatment failure rates. There was a single study that reported economic outcomes.

Table 4—Characteristics of included studies (N=18)

Characteristic	Count–N (%)
Year of publication	
• 2021	6 (33%)
• 2022	1 (6%)
• 2023	4 (22%)
• 2024	2 (11%)
• 2025	3 (17%)
• 2026	2 (11%)
Country	
• Canada	7 (39%)
• UK	1 (6%)
• US	10 (56%)
Study design	
• RCT	1 (6%)
• Quasi-experimental	7 (39%)
• Cohort	6 (33%)
• Cross-sectional	3 (17%)
• Economic evaluation	1 (6%)
Main clinical condition*	

• Antibiotic prescribing	5 (28%)
• Cardiovascular	4 (22%)
• Hormonal contraception	3 (17%)
• Multiple conditions	3 (17%)
• Opioid-related (buprenorphine, naloxone)	3 (17%)
Main outcome reported	
• Process outcomes	13 (72%)
• Clinical outcomes	1 (6%)
• Health service outcomes	4 (22%)
Safety outcome reported	
• Yes	2 (11%)
• No	16 (89%)

* Cardiovascular refers to cardiovascular risk or disease. 'Multiple conditions' are studies not included in other clinical condition categories. All percentages are rounded to whole numbers—therefore some sections may not add up to 100%.

Education, training and registration standards

Most studies provided limited detail about whether additional education or training was required for pharmacist prescribing and whether such requirements were mandatory or optional. Eight[3-5, 8, 13, 14, 17, 19] of the 18 studies did not report any information about additional training needs. Of these, five were conducted in Canada[3-5, 8, 13] and one in the UK (Wales)[17]—jurisdictions where independent pharmacist prescribing is already within the usual scope of practice.

Intervention-specific training was reported in five[2, 6, 7, 10, 16] out of the 18 studies, most commonly in trial settings where training formed part of study implementation. Four[6, 7, 10, 16] of these studies were conducted in the US (including two related to naloxone prescribing and two to statin prescribing), while one Canadian study[2] incorporated clinical education as part of the pharmacist prescribing intervention targeting stroke prevention in patients with atrial fibrillation.

Mandatory clinical training was reported in a small subset of studies (N=4), primarily in the US[9, 11, 15, 18], although one of these studies[18] did not explicitly state this mandatory requirement. These four studies focused on pharmacist prescribing in specific therapeutic areas (e.g. hormonal contraception, emergency contraception and medications for opioid use disorder) and often involved completion of nationally recognised training programs or periodic recertification. Notably, one study reported that mandatory training for emergency contraception prescribing by pharmacists, introduced in Massachusetts in 2016, was removed in 2022 through policy change to reduce barriers to implementation.[9]

Optional additional clinical training was rarely described. Only one study reported the availability of additional clinical training that was not mandatory. This was observed in a Canadian study[12] of pharmacist prescribing for UTIs—within the pharmacists' usual scope of practice—where clinical training in UTI management was offered at the start of the trial but was not a requirement for prescribing. Consequently, only about one-third of pharmacists within the trial completed the optional additional training.[12]

No studies reported whether additional registration or licensing was required beyond standard pharmacist registration to practise.

Critical appraisal and risk of bias

We used JBI checklists[39] to conduct critical appraisal and assessment for risk of bias. A separate checklist[40-44] was used for each study design. Results of these are presented in full in Appendix 2. Issues highlighted from critical appraisal are presented in Table 5.

Study design—RCT

The single RCT by Sandhu et al. (2024)[2] was open-labelled and therefore there was risk of bias from allocation to treatment groups, which was not concealed (Q2 on JBI checklist), and participants were not blinded to treatment assignment (Q4–JBI checklist). However, these are inherent difficulties in conducting health service level research where blinding is difficult; therefore, this was considered appropriate for the research question (Q13–JBI checklist).

Study design—economic evaluation

The single economic evaluation by Kim et al. (2021)[3] was a cost minimisation study and had no data on clinical or safety outcomes—therefore, clinical effectiveness could not be established (Q4–JBI checklist). The study does not include all issues of concern to users (Q10–JBI checklist) and has assumptions that are not fully justified (Q3–JBI checklist) or tested in the sensitivity analysis (Q9–JBI checklist). For example, in the base case scenario, the study assumed that 10% of URTIs presented to ED, which is not referenced and only a limited range was tested in the sensitivity analysis.

Study design—quasi-experimental studies

For quasi-experimental studies (N=7)[4-10], we identified several important sources of bias. Many of the studies used pre–post or interrupted time series designs without a concurrent control group, or with non-equivalent comparison groups, introducing potential selection bias and limiting causal inference. This was evident in Al Hamarneh et al. (2021)[4], which employed a single-group pre–post design, and Bell et al. (2025)[5] and Leung et al. (2025)[8], which used population-level pre–post or interrupted time series analyses without fully comparable control groups. While one study[9] used a difference-in-differences design with a comparator group, where the groups were broadly comparable, residual confounding remained likely because of potential differences between the two groups that were not accounted for. There was also heterogeneity in intervention delivery and study populations[4, 6, 7], where interventions included a mix of prescribing and other pharmacist activities that were not analysed separately. Adjustment for confounding was often limited or absent[5-7, 10], although some studies[8, 9] applied appropriate statistical methods for their design. Loss to follow-up and missing data were inconsistently reported or addressed[4, 10], while reliance on administrative or proxy outcome measures (e.g. dispensing records)[6-8] could have introduced potential measurement limitations. Overall, these studies provide useful real-world evidence but are subject to moderate to high risk of bias because of study design limitations and incomplete control of confounding.

Study design—cohort studies

For cohort studies (N=6)[11-16], the primary limitation was also the predominance of single-group descriptive designs without comparator groups. This applied to five studies[11, 13-16], all of which evaluated pharmacist-led services in single cohorts. Across studies, there was limited identification and adjustment for potential confounding factors, with analyses largely descriptive in nature. Even in comparative cohort designs such as Beahm et al. (2021)[12], analyses relied primarily on unadjusted comparisons despite potential baseline differences between groups. While some studies[13] did use standard comparative analysis methods (e.g. ANOVA for between-group comparisons), these did not account for clustering or repeated measures for the longitudinal cohort. Many studies[11, 13, 14] used objective data sources such as electronic dispensing databases or clinical records/registries to measure outcomes, strengthening measurement validity. However, reporting of follow-up and/or missing data was often incomplete in the studies.[11, 15, 16] Overall, these cohort studies are valuable for describing implementation and service uptake but have a high risk of bias because of lack of comparators, limited control/adjustment for confounding factors, and reliance on largely descriptive analyses.

Study design—cross-sectional studies

For cross-sectional studies (N=3)[17-19], the risk of bias varied depending on data sources and analysis methods used. Two studies[17, 19] used large administrative or electronic health record datasets, demonstrating more robust measurement of exposures and outcomes, and included the use of structured clinical tools/protocols. In contrast, one[18] of the three studies relied on self-reported survey data, which introduced the risks of recall bias, selection bias and the use of non-validated measures. Across studies[17, 18] there was limited identification and adjustment for confounding factors in the analyses. Xu et al. (2021)[19] was an exception, applying advanced regression modelling and event-study methods with adjustment for multiple confounders, although the exposure definition combined

policy mechanisms for naloxone access and could not isolate independent pharmacist prescribing effects. Additional limitations included small sample size and substantial loss to follow-up[18], further reducing reliability. Overall, the cross-sectional studies provide useful descriptive insights but are limited in their ability to support causal inference, with moderate to high risk of bias, particularly where self-reported data was used.

Table 5—Issues highlighted from critical appraisal

Study type	Issues highlighted in critical appraisal
RCT (N=1)[2]	Open-labelled, however this could be considered appropriate for this type of health service research where blinding of pharmacists and participants would not be possible.
Economic (N=1)[3]	Cost minimisation study design, which does not establish clinical effectiveness; some costs or assumptions were not well justified (e.g. proportion of URTI presentations to ED).
Quasi-experimental (N=7)[4-10]	Provides valuable real-world evidence, and in some cases used large datasets and appropriate study designs. However, the frequent use of pre–post or non-randomised study designs without equivalent control groups, limited adjustment for confounders, incomplete reporting of follow-up or missing data, and reliance on descriptive or weakly adjusted analyses, all increase the risk of bias.
Cohort (N=6)[11-16]	Useful for describing real-world service implementation using objective data sources, with some analytical methods applied. However, predominantly single-cohort descriptive studies without comparators. Similarly to the quasi-experimental studies, there was limited adjustment for confounding factors, incomplete reporting of follow-up or missing data, and analyses were largely descriptive.
Cross-sectional (N=3)[17-19]	Enables descriptive insights using administrative or survey data, with some studies applying robust measurement and modelling. Similar to the other study categories, reliance on mainly descriptive analyses with minimal adjustment for confounding, and risk of selection and recall bias because of self-reported data were issues.

Summary of outcomes

Details of included studies and their outcomes are summarised in Table 6 and described in full in Appendix 3. The limitations of each included study are also described in detail in Appendix 3.

Process outcomes

In terms of process outcomes, studies reporting the number of prescriptions over time consistently describe an increase in the number of pharmacist prescriptions following introduction of independent pharmacist prescribing policies. For example, in Bell et al. (2025)[5] pharmacist prescriptions for antibiotics in Lyme disease chemoprophylaxis increased from 1.3% (50/3900) before intervention to 61.3% (5303/8649) of all prescriptions after intervention. Two studies reported guideline adherence for independent pharmacist prescribing. For example, in the RCT by Sandhu et al. (2024)[2], guideline-concordant prescribing was higher in the early intervention group for oral anticoagulants in atrial fibrillation (92.3% vs 56.1%, $p<0.001$). Two other studies reported process outcomes, including time to statin initiation and statin adherence as a result of the prescribing intervention. Some of these studies reporting process outcomes used large national or regional databases, which included both independent pharmacist prescribing and other forms of prescribing. For example, Grant et al. (2023)[13] described 372,203 individuals receiving pharmacist prescribing services but these included six categories of prescribing service, only one of which was independent pharmacist prescribing for minor and common ailments.

Clinical outcomes

For clinical outcomes, one study by Al Hamarneh et al. (2021)[4] reported improvements in cardiovascular risk at six-month follow-up, as a result of an intervention that included independent pharmacist prescribing.

Health service outcomes

Several studies reported health service outcomes including number of patients requiring ED or hospital admission post intervention in Sandhu et al. (2024)[2]; participants visiting a primary health provider post independent pharmacist prescribing (Davis et al. (2025)[18] and O'Connor et al. (2026)[15]); and costs (Kim et al. (2021)[3]). The Sandhu et al. (2024)[2] RCT showed no difference in ED or hospital utilisation between independent pharmacist prescribing and control groups. The Davis et al. (2025)[18] and O'Connor et al. (2026)[15] studies described the proportion of patients with primary care providers at the end of the follow-up period, without a control group for comparison. The Kim et al. (2021) study[3] was a modelled economic evaluation showing cost savings of $7.51, $4.08 and $5.15 per patient for URTIs, contact dermatitis and conjunctivitis, respectively, for independent pharmacist prescribing vs usual care. Of note, the economic evaluation assumed no difference in outcomes for intervention vs usual care groups, and a high proportion of patients seeking ED care (e.g. 10% for patients with URTIs).

Safety outcomes

Safety outcomes were only reported in a single study by Sandhu et al. (2024).[2] Within this RCT of independent pharmacist prescribing with a three-month follow-up, the safety outcomes recorded included the number of patients who died and had adverse events (e.g. stroke, bleeding). Given the small number of patients in the RCT (N=80 total), the study was not powered to detect a difference in adverse events. One other study by Beahm et al. (2021)[12] reported safety outcomes in terms of treatment failure rates. In this study, treatment failure rates for UTI did not differ significantly between physician orders, which were modified by the pharmacist to adhere to guidelines, vs unmodified physician orders (13.5% vs 5.7%; p=0.266).

Table 6—Details of included studies and outcomes

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
Ahmad et al. (2022)[11]	11 months 1 August 2020 to 30 June 2021 (US academic year)	Retrospective cohort study (Level III-3)	N=125 prescribing consultations	N=1 Purdue University pharmacy in Indiana, US	Hormonal contraception and emergency hormonal contraception	Process outcome reported—number of prescriptions over the study period was described, which ranged from 1–8 prescriptions per week. No patient, health service, or safety outcomes reported.
Al Hamarneh et al. (2021)[4]	6-months follow-up period for each patient Patients enrolled August 2017 to July 2019	Quasi-experimental - pre–post study (Level III-3)	N=99 patients enrolled	N=17 community pharmacies across Alberta, Canada	Cardiovascular (CV) risk in adults with inflammatory conditions	Clinical outcome reported—primary patient outcome was estimated 10-year cardiovascular (CV) risk decreased by 24.5% after 6 months, after adjustment for age, sex, ethnicity and centre effect i.e. 21% relative risk reduction ($p < 0.001$). Secondary patient outcomes in patient with those risk factors included statistically significant reductions in LDL, systolic blood pressure and HbA1c. No health service or safety outcomes reported.
Bacci et al. (2023a)[6]	12-months follow-up period for	Quasi-experimental study—non-randomised	N=1679 intervention*, N=3358 control (usual care—pharmacist contacts physician	N=27 pharmacy locations within a large community	Adult patients aged 18–84 years with type 2 diabetes (T2D)	Process outcome reported—primary outcome was time to statin initiation within 12-months of follow-up period. No statistically

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
	each patient Patients enrolled 8 Aug 2018 to 31 Dec 2019	control study with 2:1 control to intervention pharmacy allocation (Level III-2)	to initiate statin) The quasi-experimental study only included patients with confirmed statin prescription fill after statin initiation N=442 intervention, N=854 control *Note that intervention was not fully independent pharmacist prescribing. In the intervention group pharmacists could prescribe statin or pharmacist could facilitate prescription from physician. Results described that intervention group included N=12 patients (2.7%) with pharmacist prescribing	pharmacy chain in Washington State, US	who had filled 60 days' supply of one, noninsulin diabetes medication in a rolling 6-month period, and who had not filled a statin during the same period	significant difference between groups (HR 1.00, 95%CI 0.83 to 1.21). No health service or safety outcomes reported.
Bacci et al. (2023b)[7] Same initiative as Bacci et al. (2023a)	12-months follow-up period for each patient	Quasi-experimental study—non-randomised control study with 2:1 control	N=1679 intervention*, N=3358 control (usual care—pharmacist contacts physician to initiate statin)	N=27 pharmacy locations within a large community pharmacy chain	Adult patients aged 18–84 years with type 2 diabetes (T2D) who had filled 60 days'	Process outcome reported - primary outcome was statin adherence over 12 months. No statistically significant differences in proportion of days covered in intervention and control groups - including both unadjusted and adjusted results.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
	Patients enrolled 8 Aug 2018 to 31 Dec 2016	to intervention pharmacy allocation (Level III-2)	The quasi-experimental study only included patients with confirmed statin prescription fill after statin initiation N=442 intervention, N=854 control *Note that intervention was not fully independent pharmacist prescribing. In the intervention group pharmacists could prescribe statin or pharmacist could facilitate prescription from physician. Results described that intervention group included N=12 patients (2.7%) with pharmacist prescribing	in Washington State, US	supply of one, noninsulin diabetes medication in a rolling 6-month period, and who had not filled a statin during the same period	No health service or safety outcomes reported.
Beahm et al. (2021)[12]	2-week follow-up post-prescribing Patient enrolled if	Prospective cohort study—registry-based (Level III-2)	N=750 patients with N=656 with pharmacist prescribing and N=94 in the physician prescribing	N=39 community pharmacies in New Brunswick, Canada	Treatment of uncomplicated urinary tract infection	Process outcome reported—primary outcome was guideline-concordant prescribing of antibacterial therapy, defined by local guidelines. Guideline concordance was 95.1% in pharmacist-initial prescriptions vs 35.1% in physician-initial prescription for uncomplicated UTI ($p < 0.001$). No health service outcomes reported.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
	prescribing intervention occurred between June 2017 and April 2018					Safety outcome reported as treatment failure rates. Treatment failure rates did not differ significantly between pharmacist modified physician orders to address guideline adherence and unmodified orders (13.5% vs 5.7%; p=0.266).
Bell et al. (2025)[5]	32 months—16 months before and after intervention 1 April 2020 to 30 November 2022	Quasi-experimental - pre–post study without control group (Level III-3)	N=12,549 prescriptions for N=11,310 individuals	Community pharmacies throughout Nova Scotia, Canada—number of pharmacies not reported	Lyme disease chemoprophylax is in asymptomatic adults and children (single dose of antibiotics following tick exposure)	Process outcome reported—number of prescriptions over the study period was described, including proportion of pharmacist and other prescribers. Pharmacist prescriptions increased from 1.3% (50/3900) before to 61.3% (5303/8649) of all prescriptions after intervention. No patient, health service or safety outcomes reported.
Davis et al. (2025)[18] Same initiative as Ahmad et al. (2022)	12 months Baseline survey August 2022 to	Cross-sectional study—repeated at baseline, 6 months and 12 months (Level IV)	N=33 individuals at baseline	N=1 Purdue University pharmacy in Indiana, US	Hormonal contraception and emergency hormonal contraception	Health service outcome reported—of the participants who completed the 6-month follow-up survey N=17 and 12-month survey (N=17), N=8 (32%) and N=6 (35%) respectively reported visiting a primary health provider. No patient or health service outcome reported.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
	September 2024					
Grant et al. (2023)[13]	36 months April 2017 to March 2020	Retrospective cohort study using linked provincial administrative health datasets (Level III-3)	N=372,203 individuals receiving pharmacist prescribing services* *Note that intervention was not fully independent pharmacist prescribing. Analysis presented six categories of pharmacist prescribing services together.	Community pharmacies throughout Nova Scotia, Canada. Number of pharmacies not reported	Minor and common ailments (N=33), preventive medicine (N=5), diagnosis supported by a protocol (N=3)	Process outcomes reported—mean number of prescriptions per month increased from 24.6 in 2018, to 26.3 in 2019, to 32.5 in 2020 ($p<0.001$). The highest number of prescriptions were for gastroesophageal reflux disease (N=473,327 prescriptions), followed by non-travel vaccines and contraceptive management. No patient, health service or safety outcome reported.
Hill et al. (2026)[14]	12 months 20 February 2024 to 15 January 2025	Retrospective cohort study, noting that the study additionally included a cross-sectional survey of pharmacists (Level III-3)	N=954 prescriptions	N=5 community pharmacists in Ohio, US	Common conditions (N=8) For gender-affirming care the items listed for prescriptive authority were injection supplies—syringes, needles, alcohol pads. Therefore,	Process outcomes reported—average 80 prescriptions per month. Of 954 prescriptions, 629 for gender-affirming care (injection supplies but not medications), 219 for diabetes, and 87 for asthma/chronic obstructive pulmonary disease. No patient, health service or safety outcomes reported.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
					only N=325 (34%) of reported independent pharmacist prescriber prescriptions are medication prescriptions.	
Kim et al. (2021)[3]	Time horizon for model not specified—up to two rounds of treatment Modelled scenario reported in 2019 Canadian dollars	Economic evaluation—cost minimisation analysis using a decision tree model, from public payer perspective (Level =N/A)	Modelled evaluation, hypothetical cohort of N=30,000 patients	Ontario, Canada	Minor ailments (N=3)—URTIs, contact dermatitis, conjunctivitis	Health service outcome reported—primary outcome was cost differences between pharmacist prescribing and usual care. At a service uptake rate of 38% for prescription-detached scenario, pharmacist prescribing reduced costs of $7.51, $4.08 and $5.15 per patient for URTIs, CD and conjunctivitis, respectively. For prescription-attached scenario, pharmacist prescribing reduced costs of $12.26, $4.89, $9.27 respectively. Per 30,000 patients, ED, family physicians and walk-in clinics were modelled to reduce by 799, 3677, 5090 respectively. No patient or safety outcomes reported.
Leung et al. (2025)[8]	24 months—12 months pre-intervention and 12	Quasi-experimental—pre–post study (Level III-3)	N=502,833 claims for UTI and N=37,798 claims for Lyme disease	Ontario, Canada	Minor ailments (N=2)—UTIs and Lyme disease chemo-prophylaxis.	Process outcome reported—prescribing rates (per 1000 inhabitants). Pharmacist prescribing of eligible urinary antibiotics in females increased from 0.25 (2022) to 30.08 (2023) and 37.27

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
	months post-intervention 1 January 2022 to 31 December 2024		chemoprophylaxis post implementation		Noting that there is a total of N=13 minor ailments—the others were not included in the evaluation	(2024), while physician prescribing decreased from 93.61 (2022) to 75.89 (2023) and 67.32 (2024). No patient, health service or safety outcomes reported.
Mantzourani et al. (2022)[17]	24 months November 2018 to February 2020	Cross-sectional descriptive study, repeated monthly using individual level data from electronic pharmacy records (Level IV)	N=11,304 consultations in individuals 6 years or older	N=134 community pharmacies in Wales, UK, by the end of the study period	Sore throat test and treat	Process outcomes reported—91% consultations managed by pharmacists, 8.8% referred to GP or GP out-of-hours services, 0.1% to ED. In total, 21.3% service users supplied with antibiotics. No patient, health service or safety outcomes reported.
O'Connor et al. (2026)[15]	13 months August 2023 to September 2024	Retrospective chart review from pharmacy records (Level III-3)	N=65 individuals with N=393 visits	N=1 community pharmacy in Hayden, Idaho, US	Medications for Opioid Use Disorder (MOUD)—buprenorphine prescription and naloxone kits offered as appropriate	Health service outcome reported. Patients had N=393 visits and were seen an average of 6 times, 20% with tapering buprenorphine dose during study period. Majority of patients without primary care provider (95%) and referred to local primary care clinic. At end of study period 69% established care with a primary care provider. Estimated reduction in out-of-pocket costs due to Medicaid coverage at this pharmacy vs non-Medicare pharmacy (saving

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
						$150 to $250 per fill) and reduced out-of-pocket cost at local clinic ($250 to $350 per visit). No patient or safety outcomes reported.
Qato et al. (2024)[9]	14 months including pre-policy and post-policy periods July 2021 to October 2023	Quasi-experimental study—difference-in-difference design (Level III-2)	N=92,500 emergency contraceptive fills* *Note that number of independent pharmacist prescribing not reported. Analysis presents pharmacist and other prescribing services without specifying proportion of pharmacist prescribers.	Massachusetts, US	Emergency contraceptives	Process outcome reported—primary outcome was difference before and after standing order. Difference in emergency contraceptive fills in Massachusetts was +26.8 vs control states +2.6 per 100,000. Adjusted difference-indifference of +32.1% for Massachusetts vs control, p<0.001. No patient or health service outcomes reported.
Sandhu et al. (2024)[2]	3-months follow-up period for each patient 1 January 2019 to 31 December 2022	Randomised controlled trial—open-label RCT (Level II)	N=39 in intervention group with pharmacist intervention, N=41 controls Population included patients 65 years or older with atrial fibrillation	N=27 community pharmacies in Alberta, Canada	Atrial fibrillation	Process outcome reported—primary outcome was guideline-concordant OAC use at 3 months. This occurred in 36 out of 39 (92.3%) in the early intervention group vs 23 out of 41 (56.1%) in control group (p<0.001), absolute increase of 34% and number of needed to treat (NNT) of 3. Health service outcome reported—no significant difference between intervention and control in ED visits and hospitalisations.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
						Safety outcomes reported - 3 patients died (2 in intervention, 1 in control). 1 had ischemic stroke (control), 5 bleeding events occurred (3 in intervention, 2 control). No patient had acute coronary syndrome or embolism.
Skoy et al. (2021)[16]	12 months 17 September 2018 to 11 October 2019	N=1371 identified as candidate for take-home naloxone (Level III-3)	N=2,716 individuals who completed the patient intake form	N=70 community pharmacies across North Dakota, US	Naloxone	Process outcome reported—overall acceptance rate for take-home naloxone 5.81%. No patient, health service or safety outcomes reported.
Teeter et al. (2021)[10]	3-month observation period Time frame not reported	Quasi-experimental—non-randomised control with only post-intervention comparisons (Level III-2)	N=148 intervention group offered opioid overdose counselling intervention Noting that both control and intervention groups have access to pharmacist prescribing. Focus of intervention was on additional intervention to proactively increase uptake of pharmacist prescribing	N=2 intervention and N=2 control community pharmacies in rural Arkansas, US	Naloxone	Process outcome reported—majority 87.8% agreed to opioid overdose counselling and 33.8% of these (N=44) prescribed and dispensed naloxone. Zero naloxone prescriptions were written or dispensed at comparison pharmacies. No patient or health service outcomes reported.

Study author and year	Duration	Study design (NHMRC level of evidence rating)	Population—number of participants	Population—setting	Population—conditions	Outcomes
Xu J, Mukherjee S. (2021)[19]	8 years 2010 to 2018	Cross-sectional study—repeated cross sections by quarter, using nationally representative database on drug dispensing (Level IV)	N=649,251 naloxone prescriptions dispensed in 2018 (end of study period)* *Note that number of independent pharmacist prescriber prescriptions not reported. Analysis presents pharmacist and other prescribing services without specifying proportion of pharmacist prescribers	N=over 65,000 pharmacies across the US	Naloxone	Number of naloxone prescriptions dispensed from retail pharmacies increased from 3254 in 2010 to 649,251 in 2018 State laws authorising pharmacists to prescribe naloxone are associated with an average increase of 331 (95%CI 43.56, 618.49) prescriptions dispensed per state per quarter. This represents approximately a 53% increase in naloxone dispensed compared with pharmacies in states without such laws. No patient, health service or safety outcomes reported.

Strength of evidence

The included studies were classified according to NHMRC levels of evidence (Table 3).[45, 46] There was one level II study by Sandhu et al. (2024), an open-label RCT examining guideline concordance of independent pharmacist prescribing vs physician prescribing.[2] All other studies (N=17) were lower levels of evidence (level III to IV studies).

As described in the methods, a GRADE approach was outlined in the initial protocol to assess overall certainty of evidence.[47] However, GRADE was not considered appropriate given the majority of included studies were observational, across a diverse range of clinical conditions, with more than half of all included studies descriptively reporting the number of prescriptions and no meaningful effectiveness estimates to pool.

Addressing Evidence Check questions—component 1

We conducted a narrative synthesis to address the Evidence Check research questions.

Research question	Response
1. How safe are implemented models of autonomous pharmacy prescribing and what are their effects on patient outcomes, continuity of care, GP sustainability and clinical governance?	**1a. Safety outcomes**—Overall, there remains an evidence gap regarding the safety of pharmacist prescribing across a range of clinical conditions in community pharmacy settings within the past five years. Several authors[4, 17] have hypothesised that independent pharmacist prescribing appears safe or has minimal adverse events, but few included studies quantitatively examined safety and adverse outcomes. One study examined safety and adverse outcomes in terms of death and bleeding relating to oral anticoagulant medications, but was underpowered to detect a difference in safety outcomes given the small number of participants in the trial (N=39 in intervention group; N=41 in control group).[2] Another study[12] reported that pharmacist prescribing modifications to antibiotic prescriptions from physicians were not associated with a statistically significant increase in treatment failure compared with unmodified prescriptions. However, the finding was based on a small sample size and unadjusted comparison that did not account for potential confounding. **1b. Clinical and process outcomes (patient outcomes)**—The evidence for clinical outcomes is limited and may not be generalisable across different settings and conditions. One study[4] examined clinical outcomes in terms of CVR and showed an improvement in cardiovascular risk as a result of an integrated program of independent pharmacist prescribing. The majority of studies examined process outcomes. There is evidence that prescribing rates, or access to medications, increases with independent pharmacist prescribing. The two studies[2, 12] examining guideline concordance showed a high level of concordance in the research setting. These

	process outcomes may or may not translate to clinically meaningful outcomes. **1c. Health service outcomes (continuity of care, GP sustainability)**—The included studies do not examine whether patients accessing pharmacist prescribing were more likely to require GP follow-up. These studies also do not investigate the impact on continuity of care or GP sustainability. Two studies[15, 18] reported the proportion of patients accessing primary care providers following independent pharmacist prescribing. The authors in both studies describe results as consistent with the overall background levels of primary care access, although neither study had a usual care comparator. **1d. Clinical governance—**There is limited information reported within the included studies to inform best-practice clinical governance structures. Governance structures were not explicitly described in the majority of the published studies. Two Canadian studies[4, 13] indicated pharmacist prescribing was implemented as part of usual care, implying existing institutional clinical governance frameworks applied. Four[(6, 7, 11, 18)] studies from the US reported that clinical governance was operationalised through Collaborative Practice Agreements (CPAs). These agreements functioned as formal protocol-driven frameworks that authorised pharmacists to undertake prescribing services under defined conditions, including specified patient populations, therapeutic areas and clinical criteria.[(50)] Another US study[15], which examined independent community pharmacist prescribing of medications for opioid use disorder (MOUD), including buprenorphine, identified a specific regulatory requirement. A mandatory initial in-person assessment followed by ongoing care via telehealth was implemented to comply with the Ryan Haight Act governing controlled substance prescribing.[15] Beyond this requirement, no other additional governance mechanisms were described for this study.
2. What opportunities and risks of implementing autonomous pharmacy prescribing models have been explored nationally and internationally?	**2a. Opportunities to improve access—**There is consistent evidence across the included international research (in the US, Canada and the UK) that independent pharmacist prescribing increases the number of prescriptions and may improve access to medications. There was one study reporting an improvement in clinical outcomes, in terms of reducing cardiovascular risk.[4] There were two studies showing improvements in guideline-concordant prescribing[2, 12], but the appropriateness of prescribing was not evaluated in the remaining studies. **2b. Opportunities in other types of prescribing not reviewed—** Given the scope of the Evidence Check, only independent pharmacist prescribing models in community pharmacy settings were included in component 1. During the title/abstract screening stage, the review identified non-independent pharmacist prescribing models such as collaborative prescribing models (e.g. pharmacists prescribing alongside physicians in clinic-based or community pharmacy settings). One study, Grant et al. (2023)[13], describes five forms of non-independent pharmacist prescribing including: prescribing in emergency, prescribing renewals, prescribing adaptations, prescribing

	therapeutic substitutions, and prescribing drugs that do not require a prescription. Opportunities in these areas were not explored in the Evidence Check. **2c. Risks not routinely evaluated**—The safety and risks of implementing independent pharmacist prescribing in community pharmacy settings were not routinely or systematically evaluated in international literature. Only two studies[2, 12] reported any safety outcomes in terms of failed treatment for UTI and counting adverse outcomes (e.g. number of deaths or bleeding events).
3. Among models for autonomous pharmacy prescribing practices, what are the types of education and training standards, registration requirements and the different medicines scheduling systems described?	**3a. Education and training standards**—There is limited information within the included studies to inform best-practice education and training standards. Across the included studies, reporting for education and training requirements was limited and inconsistent. Almost half the studies (N=8)[(3-5, 8, 13, 14, 17, 19)] provided no information about additional training/education, particularly in countries where independent pharmacist prescribing is within the usual scope of practice (i.e. Canada, Wales).[(3-5, 8, 13, 17)] Few studies, all in the US, described mandatory training requirements (N=4)[9, 11, 15, 18], and these were linked to specific therapeutic areas and involved nationally recognised programs, although one study[9] noted removal of such requirements to reduce barriers to pharmacist prescribing. **3b. Registration / legislative requirements**—None of the studies specified additional registration requirements beyond standard pharmacist registration for the usual scope of practice. Medicine scheduling systems were typically not described in detail in these studies. Legislative instruments enabling pharmacist prescribing varied across the studies. The studies based in Canada (N=7)[(2-5, 8, 12, 13)] used province-based legislation to authorise independent prescribing within the usual scope of practice for pharmacists, and included prescribing for conditions such as minor and common ailments (N=3), reducing cardiovascular risk (N=1), uncomplicated UTIs (N=1), chemoprophylaxis for asymptomatic Lyme disease (N=1) and oral anticoagulants in patients with atrial fibrillation (N=1). Community pharmacist prescribing in the single UK study[17] was enabled via national legislation that extended structured independent prescribing within the minor ailments scheme. Five[6, 7, 11, 14, 18] of the 10 studies from the US indicated that pharmacist prescribing was legislated via Collaborative Practice Agreements (CPAs). These CPAs enabled a structured form of independent pharmacist prescribing for specific conditions and within controlled criteria at the population level, rather than requiring authorisation from the physician on a case-by-case basis for individual patients.[(50)] While two[11, 18] of those five studies used CPAs, the state of Indiana had passed legislation in 2023 to enable pharmacist prescribing via state-wide protocol. Studies based in the US also highlighted the use of state-based legislation that enabled independent pharmacist prescribing as part of usual practice (N=2)[15, 16] or for specific conditions/medications (N=1)[19], and state-wide standing orders (N=2)[9, 10] that enabled independent pharmacist prescribing.

4. What are the limitations and gaps in the existing literature?	**4a. Setting—**Component 1 included any high-income country as defined by the World Bank[36], but the majority of studies included were conducted in the US (N=10) or Canada (N=7), with a single study from the UK (N=1). There were no Australian studies in component 1. Given differences in health systems, the outcomes of independent pharmacist prescribing in community pharmacy settings found in these studies may or may not be applicable to the Australian setting. **4b. Clinical conditions evaluated—**A variety of clinical conditions were evaluated. However, these represent a small subset of common and minor ailments considered for independent pharmacist prescribing in community pharmacy settings across Australia and internationally. For example, in two studies covering the largest number of common and minor conditions[13, 14], a list of more than 30 conditions or medicines was provided but only a few were formally evaluated in the research. Furthermore, both of these studies looking at common and minor conditions reported number of prescriptions only. Given the diversity of clinical conditions, the outcomes (e.g. clinical effectiveness outcomes) from one condition do not necessarily apply to other clinical conditions. **4c. Study designs—**There is a gap in the literature in terms of appropriate study designs to evaluate quantitative outcomes of independent pharmacist prescribing in community pharmacy settings. Across the included studies, there were a large number of observational studies and only a single RCT.[2] Non-RCTs are considered a lower level of evidence because of the risks of bias in the assessment of outcomes. A large number of observational studies did not have a control group and therefore are only able to report outcomes in a particular group of patients before and after independent pharmacist prescribing. A lack of control group means there is no point of comparison as to whether the differences observed in the earlier and later time points are related to the pharmacist prescribing intervention or are a result of other factors. There was one model-based economic evaluation[3], which showed reductions in costs as a result of independent pharmacist prescribing in the community pharmacy. It was a cost minimisation study, which assumed outcomes would be the same for both intervention and usual care groups. This assumption of equivalent clinical effectiveness and safety outcomes has not been established in the literature. **4d. Types of outcomes assessed—**The types of outcomes assessed have been summarised in the response to question 1, above. There is a gap in all clinical, health service and safety outcomes.
5. What are the implications of the findings?	**5a. Improving access to medications**—The included studies highlight the potential for improving access to medications when independent pharmacist prescribing is implemented in community pharmacy settings, and some evidence of improved process outcomes, such as guideline-concordant prescribing. **5b. Insufficient evidence for the Australian setting**—The current study designs, limited number of conditions evaluated, limited health settings and types of outcomes evaluated mean there is insufficient

	evidence to inform independent pharmacist prescribing policies in community pharmacy settings in Australia. It is important to consider the body of international evidence, but it is not sufficient to cite existing international studies as evidence for effectiveness or safety of independent pharmacist prescribing in the Australian community pharmacy setting. **5c. Robust evaluations**—Evaluations alongside implementation of independent pharmacist prescribing interventions in community pharmacy settings in Australia should include study designs with a control group (e.g. RCT or quasi-experimental studies—pre–post with a control group), and key outcomes including clinical, health service (including costs) and safety outcomes. These high-quality evaluations would be important to conduct for a range of conditions implemented, and such evidence would contribute meaningfully to international evidence on the topic of independent pharmacist prescribing in community pharmacies.

Methods—component 2

Component 2 was a desktop (grey literature) review focusing on independent pharmacist prescribing in the Australian setting. The review sought to address the research questions below. It was not within the scope of this Evidence Check to take a position for or against current policy related to independent pharmacist prescribing in Australia.

Research questions

1. Have the pilots and trials in Appendix 1 of the research protocol (Appendix 5 of the final report) received ethics committee approval in accordance with the National Statement on Ethical Conduct in Human Research?[1]
2. What were the aims, scope, governance and monitoring mechanisms of the trials and pilots in Appendix 1 of the research protocol (Appendix 5 of the final report)?
3. How do the Appendix 1 pilots and trials in the research protocol (Appendix 5 of the final report) compare with international best practices for human research?
4. Does the existing evidence support the use of autonomous pharmacy prescribing for the ailments and chronic conditions listed in Appendix 2 of the research protocol (Appendix 6 of the final report)?
5. What are the limitations and gaps in the existing literature?
6. What are the implications of the findings?

Selection process

Component 2 focused on publicly available documents relating to independent pharmacist prescribing initiatives in community pharmacy settings across Australian states and territories. The initial list was provided by the RACGP and was supplemented by a targeted search conducted by the research team to identify additional relevant information and documents. The final dataset for component 2 included information available on websites, protocol documents, legislative documents and evaluation reports, and while comprehensive it was not exhaustive. We maintained a document inventory (Appendix 4) recording the source, state or territory, and document type.

Data extraction

Data was extracted into a standardised data extraction form by a single reviewer and checked for accuracy by a second reviewer. A third reviewer resolved any conflicts.

Quality appraisal and evidence grading

Similar to component 1, the methodological quality of the included evaluation reports was appraised using JBI critical appraisal tools.[39-44] Critical appraisal was conducted by two independent reviewers and any conflicts were resolved by a third reviewer.

Each included evaluation report was first categorised to the most appropriate study design based on the methodology described in the report and subsequently appraised using the corresponding JBI critical appraisal tool. The included evaluation reports were also classified according to the NHMRC levels of evidence (Table 3)[45, 46]. A GRADE approach[47] was outlined in the initial protocol to assess overall certainty of evidence. However, this was not deemed appropriate given the limited number of studies with meaningful outcomes for synthesis and comparison.

Initially, in the protocol we planned to appraise pilots and trials against four domains and assign a simple point rating for each domain (3 – meets standard / 2 – partially meets / 1 – does not meet / N/A – not assessable), supported by brief justification notes. However, given the limited number of evaluation reports that are publicly available, we summarised those domains in a table format (see Table 8) and highlighted gaps in the literature alongside this.

Data synthesis

We conducted a narrative synthesis to address the questions (Q1–Q6) in component 2. Furthermore, evidence extracted and appraised through component 1 and component 2 was mapped against common and minor conditions included in Australian and/or international settings.

Results—component 2

Included documents

Component 2 included 122 documents, comprising websites, protocol documents, legislative documents and evaluation reports. Of these, there were two public reports available for extraction of outcomes. These included the 2024 UTI pilot final evaluation report from Queensland and the 2025 Victorian pilot evaluation report (OCP resupply, UTI, herpes zoster and flare-up of plaque psoriasis).[51, 52]

Current status across Australia

The time line, pilots and usual care implementations of independent pharmacist prescribing and the current status of any available evaluations at the time of writing (29 May 2026) are described in Table 7 and in full in Appendix 5. Note, however, the evaluation of the NSW Pharmacy Trial pharmacist prescribing for UTI and resupply of OCP was only publicly available in early June 2026[20], after submission of the draft Evidence Check report, and was therefore not included in this final report.

Time lines by jurisdiction

In summary, Queensland began pilots for a UTI treatment trial in 2020, which was followed by implementation into usual care in 2022. This was followed by other states and territories either piloting or implementing independent pharmacist prescribing for uncomplicated UTIs into usual care from 2023 onwards. In addition to UTI management, a number of states expanded community pharmacy access to OCPs, either through pilot programs or by incorporating resupply or prescribing arrangements into usual care without an explicitly described pilot process. Additional common and minor conditions (N=15) and chronic conditions (N=5) were piloted in Queensland from 2024 and 2025, respectively. Aside from the Queensland UTI evaluation report in 2023 and limited descriptive outcomes from the Victorian evaluation in 2025, evaluations of quantitative outcomes for the majority of conditions have not been conducted or completed.

As of 2026, all jurisdictions have announced the rollout of community pharmacist prescribing for common and minor conditions—approximately 20 conditions in total, with most conditions based on the list of conditions piloted in Queensland. From the reviewed documents, Queensland and SA appear to be the only jurisdictions to have legally enabled a broad community pharmacist prescribing framework across a wider range of protocols, although the available material indicates rollout is still staged rather than fully embedded across usual care.

Requirements by jurisdiction

Throughout Australia, pharmacists must be registered with the Pharmacy Board of Australia through the Australian Health Practitioner Regulation Agency (AHPRA). This general registration is a prerequisite for all pharmacist scope of practice, including independent pharmacist prescribing in all states and territories. Additional prescribing requirements apply in Queensland and SA for specific prescribing initiatives, where pharmacists must obtain a prescriber number from the relevant state health department and be included on the state community pharmacist prescriber register.

All jurisdictions require mandatory training. Common options for meeting this requirement include Australian College of Pharmacy or Pharmaceutical Society of Australia short course modules, which vary from one to <6 hours in duration per clinical indication for prescribing. University-level graduate certificates (six months' full-time equivalent) are also an alternative option in the majority of states and territories.

Table 7—Status of independent pharmacist prescribing across Australia

State	Time line of pilots and changes to usual care	Details of scope and conditions	Current requirements (training and registration)	Evaluation status
ACT	**2023** Pilot for UTI, OCP resupply, skin conditions as part of NSW Pharmacy Trial **2025** UTI part of usual care **2025** Common and minor conditions rollout announced, but start date yet to be determined **2026** Hormonal contraception part of usual care **2026** Common and minor conditions rollout announced, but start date yet to be determined	NSW Pharmacy Trial—see details under NSW Common and minor conditions—full list is not stated	AHPRA general registration UTI & OCP resupply: Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short course 2.5–3.5hr duration; or other accredited approved training advised or required by the Chief Health Officer (not specified)[53, 54] Minor skin conditions: Mandatory approved Queensland-based university options—individual subjects at Queensland University of Technology or James Cook University; or other accredited training advised or required by the Chief Health Officer (not specified)[55]	Evaluation as part of NSW Pharmacy Trial—see details under NSW.
NSW*	**2023** Pilot for UTI, OCP resupply as part of NSW Pharmacy Trial **2024** Pilot for skin conditions as part of NSW Pharmacy Trial **2024** Common and minor conditions rollout announced but start date yet to be determined	NSW Pharmacy Trial included UTI, OCP resupply, common skin conditions (herpes zoster, acute exacerbation of mild plaque psoriasis, mild to moderate atopic dermatitis, impetigo) Common and minor conditions—full list is not stated	AHPRA general registration UTI & OCP resupply: Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short course 2.5–3.5hr duration[53, 54]	Evaluation of all conditions included in the NSW Pharmacy Trial is described and under way, but there was no publicly available report at time of writing this Evidence Check. University of Newcastle-led evaluation.

	2025 Conditions from the NSW Pharmacy Trial included as part of usual care		Minor skin conditions: Queensland-based university options—individual subjects at Queensland University of Technology or James Cook University; or other accredited training advised or required by the Chief Health Officer (not specified)[56]	
NT	**2024** UTI part of usual care **2026** Common and minor conditions rollout announced (N=21), but start date yet to be determined	Proposed common conditions (N=21) similar to Queensland list for common conditions and chronic conditions	AHPRA general registration Mandatory UTI accredited training is currently provided by the Australasian College of Pharmacy and the Pharmaceutical Society of Australia—short course 2.5hr duration[53] Common conditions qualifications through James Cook University and PSA Pharmacist Prescribing Scope of Practice training program[57, 58]	No evaluation described or publicly available.
Qld	**2020** Pilot for UTI started (UTIPP–Q) **2022** UTI part of usual care **2024** Pilot for hormonal contraception started **2024** Pilot for additional (N=15) common conditions started **2025** Hormonal contraception part of usual care **2025** Additional (N=15) common conditions part of usual care	Common conditions (N=15) include: nausea and vomiting associated with gastroenteritis, otitis externa, otitis media, wound management, rhinitis, GORD, herpes zoster (shingles), impetigo, management of overweight and obesity, mild acute musculoskeletal pain, acne, atopic dermatitis, plaque psoriasis, smoking cessation, travel health Chronic conditions (N=5) include asthma, COPD, CVD blood glucose, CVD dyslipidaemia and CVD hypertension	Hormonal contraception, common conditions and chronic conditions pilot: prescriber number issued by Queensland Health and inclusion on state community pharmacist prescriber register, in addition to AHPRA general registration (which applies to all other pharmacist prescribing)[59] Mandatory training for all pharmacist prescribing UTI: Pharmaceutical Society of Australia—short course 2.5hr duration[53]	Final evaluation report available for UTI pilot in 2023. Also published as peer-reviewed journal article in 2025. No publicly available evaluation for all other pilot conditions. The chronic conditions management (N=5) pilot is still in progress and Deloitte has been engaged to undertake the evaluation.

	2025 Pilot for chronic conditions management started (N=5)		Hormonal contraception: training program developed for the Queensland Community Pharmacy Hormonal Contraception Pilot; or other accredited training[60] Common conditions and chronic conditions pilot: via Australian-based university or other options that must include prescribing and clinical training components. Current approved training: a graduate certificate program from James Cook University and Pharmaceutical Society of Australia training programs—6 months' full-time equivalent[61]	
SA	**2024** UTI and OCP resupply part of usual care **2026** Common and minor conditions (N=18) part of usual care	Common conditions (N=18) similar to list for Queensland	Common and minor conditions: Prescriber number issued by SA Health and inclusion on state community pharmacist prescriber register, in addition to AHPRA general registration (which applies to all pharmacist prescribing).[62] UTI & OCP resupply: Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short course 2.5–3.5hr duration[53, 63] Common and minor conditions: Mandatory graduate certificate in pharmacist prescribing (approved courses at Adelaide University, James Cook University, Monash University, and University of Western Australia)[64]	No evaluation described or publicly available.
Tas	**2024** Pilot for UTI started	Common conditions (N=3) were UTI, OCP resupply and hormonal contraception (a range of hormonal contraceptive options	AHPRA general registration	No evaluation described or publicly available.

	2025 Common and minor conditions (N=3) part of usual care with additional common and minor conditions (N=20) planned to start late 2026. Start date yet to be determined	including pills, contraceptive vaginal ring, injectable depot progesterone) Proposed common conditions similar to list for Queensland	Current minor conditions: Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short courses 2.5 (online) to 6 hours' (blended courses with OSCEs) duration for each condition[53, 60, 65] Expanded common and minor conditions: Mandatory approved postgraduate-level training[66, 67]	
Vic	**2023** Pilot for resupply OCP, UTI, skin conditions (herpes zoster, plaque psoriasis) as part of Victorian Community Pharmacist Statewide Pilot **2025** Conditions from the pilot part of usual care **2025** Additional conditions announced (N=22 total) but start date yet to be determined	Common conditions not listed in full on publicly available documents	AHPRA general registration Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short courses 1–5 hours' duration for each condition[68-70]	Final report available for pilot conditions (resupply OCP, UTI, skin conditions) in 2025.
WA	**2023** UTI started as usual care **2024** Resupply OCP started as usual care **2025** Common and minor conditions pilot rollout announced (N=16) but not yet commenced (proposed start 2027)	Common conditions (N=16) similar to list for Queensland	AHPRA general registration UTI & OCP resupply: Mandatory training via Australian College of Pharmacy or Pharmaceutical Society of Australia modules—short course 2.5–3.5hr duration[53, 71] Common and minor conditions: Mandatory training via Australian-based university options. Current approved training comprises graduate certificate programs from James	No evaluation described or publicly available.

			Cook University and University of Western Australia—6 months' full-time equivalent[72]	

*Table is accurate at time of writing (29 May 2026). Note, however, the evaluation reports for the NSW Pharmacy Trial of pharmacist prescribing for UTI and resupply of OCP became available in early June 2026, after submission of the draft Evidence Check report, and was therefore not included in this final report.

Summary of evaluations

Available evaluations

In terms of evaluations by jurisdiction, Queensland made publicly available its UTI management evaluation report[51] in 2024 and Victoria in 2025 for limited minor conditions (resupply OCP, UTI, skin conditions)[52]. Reports were pending or not publicly available for other states with planned evaluations (ACT/NSW) at the time of writing this report. However, the evaluation of the NSW Pharmacy Trial of pharmacist prescribing for the treatment of uncomplicated UTIs and OCP resupply was released in early June 2026[20], after submission of the draft report for this Evidence Check, and was not included in this final report. No evaluation is described for NT, SA, Tasmania or WA.

For the N=2 publicly available evaluation reports included in this Evidence Check, we reported evaluation characteristics in terms of ethics approval, clinical trial registration status, study design, main outcomes and limitations. Findings from the critical appraisal are summarised alongside these characteristics in Table 8.

Quality appraisal and evidence grading

Similar to component 1, the methodological quality of included evaluation reports was assessed using JBI critical appraisal tools relevant for the study design that each evaluation report was categorised to. The results of the appraisal questions and checklist responses are available in Appendix 2.

Study design—cohort studies

Based on the primary methodology described, the evaluation report for the Queensland UTI pilot[51] was classified as a cohort and appraised accordingly. For this cohort study (N=1)[51], the primary limitation was the use of a single-group observational design without a comparator group, which significantly limited the ability to attribute observed outcomes to the intervention rather than underlying patient or contextual factors. Although exposure to the intervention was clearly defined and UTI assessment followed a structured clinical protocol, the validity of the primary outcome (resolution of UTI) was uncertain because of reliance on patient self-reported symptom resolution at seven-day follow-up. This study was also affected by substantial loss to follow-up, with only 29% of patients who accessed the UTI prescribing service followed up at seven days. Importantly, reasons for loss to follow-up were not fully reported, nor were they accounted for in the analysis. Furthermore, the flow chart of included patients in the evaluation report is inconsistent in regard to proportion of patients lost to follow-up. The study design further limited the analytical approach, with statistical analyses largely descriptive and not accounting for confounding factors. Overall, this study provides valuable large-scale real-world data about service implementation, but it is subject to a high risk of bias.

Study design—cross-sectional

Based on the described design and analyses, the evaluation report for the Victorian minor conditions pilot (covering UTI, OCP resupply and four minor skin conditions)[52] was categorised and appraised as a cross-sectional study. The methodological quality was mixed for this cross-sectional study (N=1)[52], with both strengths and limitations. The study clearly defined its inclusion criteria; however, the description of subjects and setting was incomplete. While structured clinical protocols were used for condition assessment, there was limited description of how the service consultation data were collected, making reliability of exposure and outcome measurement using administrative data unclear. Survey components (both patient and pharmacist) relied on self-selection with low response rates (patient response rates were 20% and 37%; the pharmacist response rate was 18%) raising concerns about selection bias and representativeness. The self-reported survey data also introduced reporting bias. Additional limitations included the absence of confounder identification and adjustment, and reliance on predominantly descriptive analyses. Overall, this cross-sectional evaluation provides useful descriptive insights into service utilisation and pharmacist and patient-reported experiences in a real-world setting; however, its limitations result in a moderate-to-high risk of bias.

Evidence grading

Under the NHMRC levels of evidence framework (Table 3)[45, 46], both evaluations are considered level IV evidence, which are observational studies without a comparator. This means there is some, but weak evidence from which to draw reliable conclusions.

Stakeholder feedback and responses

In the review of grey literature documents, we noted that stakeholders have provided public feedback. These included correspondence letters[73, 74] and a survey report from the Australian Medical Association's Queensland branch[75] noting concerns with the UTI and scope of practice pilots in Queensland. Key issues highlighted in these documents are summarised in Table 9. A 2026 response from the Queensland branch of the Pharmacy Guild to the AMA Queensland Survey Report, outlining its position and perspectives on the survey findings is also publicly available.[76]

Table 8—Summary and critical appraisal of Australian evaluations

State	Year	Ethics	Study design and participants	Main outcomes	Key limitations (as per authors)	Additional comments and critical appraisal issues
Qld[51]	2023	Ethics approval for the UTI pilot evaluation was obtained through the QUT Human Research Ethics Committee (Approval number 2000000140) None stated for trial itself—therefore unclear if implementation was considered in the ethics application, and UTI trial was not registered on ANZCTR	Prospective cohort study for quantitative outcomes Conducted alongside mixed-methods study including surveys of participants and pharmacists N=12,509 total study population, of which N=10,270 had initial consultations for UTI	N=2973 (29%) were followed up (N=7297 lost to follow-up). Process outcomes reported: antibiotic treatment prescribed in 96.6% (9917/10,270) of initial consults; pharmacists adhered to prescribing protocol in 93.0% (9555/10,270) of consultations Clinical outcomes for the patients followed up: UTI symptom resolution in 87.6% (2603/2973) Health service outcomes: ED or hospital visit at follow-up in N=5 patients Safety outcomes: N=102 adverse events (from N=85 patients)—self reported, most	Antibiotic selection and protocol adherence: No routine microbiological confirmation of UTI or antibiotic appropriateness; effectiveness based on patient self-reported symptom resolution rather than objective testing Outcomes measures in followed-up patients were self-reported (introducing recall bias and subjective assessment of symptom resolution) Large loss to follow-up. Potential under-ascertainment of harm, as adverse events and healthcare use may be missed among patients not followed up. Incomplete reporting of reasons for loss to follow-up, with most non-responses unexplained, increasing uncertainty about missing outcomes	No comparator. Evaluation report indicated that RCT of service was not undertaken because of existing level of evidence of successful implementation of service in other countries (i.e. Canada, UK, Scotland, NZ). Note that none of the cited studies were RCTs. The published paper did not use common terms for independent pharmacist prescribing and was therefore not included in component 1 of the Evidence Check. No economic outcomes were included in report.

				commonly nausea and vaginal candidiasis		
Vic[52]	2025	None stated for implementation or evaluation	Cross-sectional study including survey of participants and pharmacists. Has limited cohort study component describing quantitative outcomes in terms of number of services provided throughout the evaluation time frame	Limited quantitative outcomes Process outcomes reported: Number of services delivered: N=10,680 UTI, N=6316 OCP resupply, N=231 mild skin conditions. Also reported 93% of patients received care within 24 hours Safety outcomes: the report stated no adverse patient safety events that resulted in serious harm or death were raised through complaints or audit checks. Did not report number of minor adverse events or describe what they were	The evaluation focused on assessing the implementation of the pilot's model of care in the context of existing research and evidence, demonstrating the effectiveness of the four available treatments. It was not designed to be a clinical controlled trial. The evaluation collected de-identified information about patient experiences and outcomes using two different surveys at different time points. Consequently, the survey data was not designed to track the impact of the pilot on individual patients over time Two peak bodies representing medical primary healthcare providers, although invited, did not participate in the qualitative interviews. Therefore, their views of the pilot are not included in evaluation report	No comparator. Evaluation stated it was not designed to be a clinical trial in the context of existing research and evidence demonstrating effectiveness, but did not cite any relevant studies to support claim of effectiveness. Limited quantitative outcomes reported—no clinical or health service outcomes reported (including economic outcomes), limited evaluation of safety outcomes. Patient and pharmacist-evaluation surveys were self-selected into the sample, had low response rates (patients=20% and 37%; pharmacists=18%), and relied on self-reported data.

*Table is accurate at time of writing (29 May 2026). Note, however, the evaluation reports for the NSW Pharmacy Trial of pharmacist prescribing for UTI and resupply of OCP became available in early June 2026, after submission of the draft Evidence Check, and was therefore not included in this final report.

Table 9—Summary of stakeholder concerns for UTI pilot in Queensland

Stakeholder document	AMAQ stakeholder letter (2022)[73]	AMAQ stakeholder letter (2023)[74]	AMAQ stakeholder survey (2022)[75]
Main concerns	1. UTIPP–Q pilot: - Research integrity: Unethical conduct concerns; lack of trial registration; conflicts of interest - Evaluation flaws: Data misreporting, omissions, unsubstantiated findings - Protocol deviation: Clinical workflows altered; eligibility criteria not followed - Patient safety risks: Misdiagnosis, no testing, inadequate follow-up - Antimicrobial stewardship: Safeguards weakened/absent.	1. UTIPP–Q pilot: - Legal/non-compliance concerns: Potential supply of antibiotics outside regulations - Protocol inconsistency: PSA standards vs trial protocol vs software misaligned - Protocol non-adherence: Eligibility criteria not applied in practice - Failure to identify high-risk patients: STI risk, complicated/recurrent UTIs missed - Data integrity issues: Incorrect definitions (e.g. recurrent UTI) distorting results - Patient safety risks: Delayed/missed diagnosis of serious conditions.	AMAQ stakeholder survey (2022): 1. UTIPP–Q pilot: - Adverse outcomes: ~240 complications; ~1 in 5 GPs observed cases - Misdiagnosis: STI, pregnancy, cancer commonly missed - Inappropriate antibiotic use: Resistance, repeat prescribing, allergies - Serious harms: Hospitalisations (e.g. sepsis, pyelonephritis) - Contributing factors: No exam/testing; limited privacy affecting disclosure.

Condition-specific assessment

We summarised the evaluations from component 1 of international peer-reviewed research published from 2021–2026 and component 2 for Australian grey literature according to individual clinical conditions in Table 10. A full version of these results is available in Appendix 6.

- Green indicates where evaluation has been conducted and results are available. We considered evaluation results available where there are any results other than number of medications prescribed
- Yellow indicates where evaluations are incomplete. This includes where an evaluation is planned or conducted but with no publicly available report or where evaluations report number of prescriptions only with limited other outcomes
- Red indicates where evaluations have not been conducted.

From the list provided, oral health and travel health were not included given no clear independent pharmacist prescribing of a medication for these clinical categories.

Table 10—Condition-specific assessment

Condition	Evaluated in Australia?	Evaluation outcomes	Evaluated in international research included in component 1?	Evaluation outcomes	Key evidence gaps and comments
Common and minor conditions (N=19)					
Acute exacerbations of mild plaque psoriasis	Y — NSW	No report	N	N/A	NSW has no publicly available evaluation report.*
Acute minor wound management	N	N/A	N	N/A	N/A
Acute nausea and vomiting	N	N/A	N	N/A	N/A
Acute otitis externa	N	N/A	N	N/A	N/A
Acute otitis media	N	N/A	N	N/A	N/A
Allergic and nonallergic rhinitis	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
Eczema	Y — NSW	No report	N	N/A	NSW has no publicly available evaluation report
Gastro-oesophageal reflux and gastro-oesophageal reflux disease	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
Herpes zoster (shingles)	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
Hormonal contraception	Y — NSW, Vic	NSW — no report Vic — number of prescriptions only and	Y	Number of prescriptions described with limited health service outcomes	NSW has no publicly available evaluation report.*

Condition	Evaluated in Australia?	Evaluation outcomes	Evaluated in international research included in component 1?	Evaluation outcomes	Key evidence gaps and comments
		limited other quantitative outcomes			Vic — limited clinical, health service or safety outcomes reported.
Impetigo	Y — NSW	No report	N	N/A	NSW has no publicly available evaluation report.* Vic — limited clinical, health service and safety outcomes reported.
Management for overweight and obesity	N	N/A	N	N/A	N/A
Mild acute musculoskeletal pain and inflammation	N	N/A	N	N/A	N/A
Mild to moderate acne	N	N/A	N	N/A	N/A
Mild to moderate atopic dermatitis	Y — NSW, Vic	NSW — no report Vic — number of prescriptions only and limited other quantitative outcomes	Y	Number of prescriptions only	N/A
Oral health risk assessment and fluoride application	N/A	N/A	N/A	N/A	Not included in review — not independent pharmacist prescribing of a medication.
Smoking cessation	N	N/A	Y	Number of prescriptions only	N/A
Travel health	N	N/A	N	N/A	N/A

Condition	Evaluated in Australia?	Evaluation outcomes	Evaluated in international research included in component 1?	Evaluation outcomes	Key evidence gaps and comments
Weight and obesity management	N	N/A	N	N/A	N/A
Chronic conditions (N=3)					
Asthma	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
COPD	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
CVD risk reduction (this includes diabetes)	N	N/A	Y	Process outcomes, clinical outcomes, health service outcomes reported	No safety outcomes reported.
Other conditions (N=7)					
AF	N	N/A	Y	Process outcomes reported, with limited safety outcomes	No clinical or health service outcome reported.
Conjunctivitis	N	N/A	Y	Health service outcomes reported in terms of costs	Modelled economic evaluation with limited primary data.
Lyme disease prophylaxis	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
Opioid-related	N	N/A	Y	Number of prescriptions only	No clinical, health service or safety outcomes reported.
Urinary tract infection	Y — NSW, Vic, Qld	Qld — process outcomes, limited clinical, health service and safety outcomes	Y	Process outcomes reported (e.g. guideline concordance), health	NSW has no publicly available evaluation report.*

Condition	Evaluated in Australia?	Evaluation outcomes	Evaluated in international research included in component 1?	Evaluation outcomes	Key evidence gaps and comments
		NSW — no report Vic — number of prescriptions only and limited other quantitative outcomes		service outcomes (e.g. costs)	Modelled economic evaluation with limited primary data. No clinical outcomes reported in international studies.
URTI	N	N/A	Y	Process outcomes, health service outcomes including costs reported.	No clinical or safety outcomes reported.

Green indicates where evaluation has been conducted and results are available. We considered evaluation results available where there are any results—including studies that only report number of medications prescribed without other outcomes. Yellow indicates where evaluations have been planned or conducted but no evaluation results are publicly available, and red indicates where evaluations have not been conducted.

Y = yes; N = no; N/A = not assessable.

*Table is accurate at time of writing (29 May 2026). Note the evaluation reports for the NSW Pharmacy Trial of pharmacist prescribing for UTI and resupply of OCP became available in early June 2026, after submission of the Evidence Check draft report, and was therefore not included in this final report.

Addressing Evidence Check questions—component 2

We conducted a narrative synthesis to address the Evidence Check research questions.

Research question	Response
1. Have the pilots and trials in Appendix 1 of the research protocol (Appendix 5 of the final report) received ethics committee approval in accordance with the National Statement on Ethical Conduct in Human Research?	**1a. Pilots and trials available:** All states and territories in Australia (N=8) have begun to implement independent pharmacist prescribing, either as a pilot or part of usual care. Of these, N=2 had ethics approvals (NSW and Qld) and N=1 (NSW) was registered on ANZCTR with publicly available evaluation protocols. **1b. Ethics approval:** We assessed the status of ethics approval and registration as a clinical trial on ANZCTR, by jurisdiction. The pilot in NSW/ACT received ethics approval from the University of Newcastle HREC as of 27 June 2023 (approval number H-2023-0119). According to ANZCTR, the trial was retrospectively registered on ANZCTR on 27 July 2023. In Queensland, the publicly available final report[51] stated that *"ethics approval was only required for the evaluation component of the pilot and was obtained through the QUT Human Research Ethics Committee (Approval number 2000000140)"*. The implementation of pharmacist prescribing was not registered on ANZCTR, and it is unclear whether the implementation protocol was considered as part of the ethics application.
2. What were the aims, scope, governance and monitoring mechanisms of the trials and pilots in Appendix 1 of the research protocol (Appendix 5 of the final report)?	**2a. Aims**: The aims of each independent pharmacist prescribing initiative varied across states and territories but can generally be summarised as improving patient access to medications for common and minor conditions. **2b. Scope of evaluation**: The scope of evaluations was limited, with only UTI, hormonal contraception and skin conditions reported in publicly available documents for Queensland and Victoria. This is a small number of conditions relative to the larger number of conditions (approximately N=20) included in common and minor conditions for independent pharmacist prescribing across states and territories. **2c. Governance:** All states and territories rely on structured clinical protocols as the core clinical governance mechanism for pharmacist prescribing services. Several jurisdictions (Qld, SA, Vic) also provide additional resources to support pharmacist prescribers in implementing and maintaining consistent practice. These resources may include clinical assessment templates, practice handbooks and guidance documents; however, their scope and nature vary across these jurisdictions. **Qld:** Pharmacist prescribing for existing usual scope of practice and current pilot program, both of which covered a larger range of conditions (up to N=20 conditions).

	SA: Pharmacist prescribing within usual scope of practice covered a large range of conditions, similar to Qld. **Vic & NSW**: Pharmacist prescribing within usual scope of practice for a moderate range of conditions (UTI, resupply of oral contraception, selected minor conditions, vaccines). **NT, ACT & WA**: Pharmacist prescribing within usual scope of practice covered a small number of conditions (UTI, resupply of oral contraception). No protocols yet for proposed expanded pharmacist prescribing. Approved mandatory additional training is required for pharmacist prescribing in all states; however, the structure and provider of the training vary. For example, additional training for UTI for all states is a 2.5-hour online module provided by PSA[53, 68] that includes assessment. For states (Qld, Tas) that have pharmacist prescribing to initiate hormonal contraception, the training is a 6-hour blended PSA training program with online self-paced modules, interactive AI assessments, OSCEs, and a written assessment.[60] Whereas for SA, where initiation of hormonal contraception is part of the Community Pharmacy Expanded Scope of Practice program, training for this whole program requires a graduate certificate.[64, 77] General registration with the Pharmacy Board of Australia through AHPRA is the minimum requirement for all usual scope of practice for pharmacists including independent pharmacist prescribing in all states. There are additional requirements for independent prescribing in Queensland and SA, such as applying for a prescriber number from the relevant state department of health and applying for inclusion on the state community pharmacist prescriber register. The additional requirements apply to Queensland for pharmacists who prescribe initiation of hormonal contraception, the General Health Community Pharmacy Services (i.e. common and minor conditions), and the Community Pharmacy Chronic Conditions Management Pilot (i.e. asthma, COPD and the CVD risk reduction program for type 2 diabetes, hypertension and dyslipidaemia)[59], and in SA for the Community Pharmacy Expanded Scope of Practice initiative (i.e. initiation of hormonal contraception, and common and minor conditions).[62]
3. How do the Appendix 1 pilots and trials in the research protocol (Appendix 5 of the final report) compare with international best practices for human research?	**3a. Nature of the pilots:** The nature of the pilots in Australia is that they can be considered a pilot policy rollout rather than pilot research. Of the N=8 states and territories, N=2 had ethics approvals (NSW and Qld) and N=1 (NSW) was registered on ANZCTR with publicly available evaluation protocols. **3b. Compared with international literature:** In general, the current initiatives throughout Australia have been, or are planned to be implemented as part of usual care or a government-initiated rollout, rather than through a traditional clinical trial process. This approach stands in contrast to medication trials, for example, where there are Phase I to IV clinical trials and an expectation of RCT-level evidence before widespread uptake. There is an expectation for human research ethics committee approval for clinical trials, which may not automatically be the case for service-level implementation and/or service evaluation.[78] The nature of the policy rollouts and service

	evaluations in Australia is comparable to the international studies described in component 1. **3c. Quality of research compared with international literature:** The Queensland UTI pilot evaluation was a prospective cohort study, similar to common study designs in the international literature from component 1. Victoria used predominantly a cross-sectional study design and was not able to assess outcomes other than the number of services provided. Both can be considered as weak evidence (graded as NHMRC level IV evidence). Notably, both Queensland and Victorian evaluations[51, 52] addressed the lack of a control group with the justification that independent pharmacist prescribing has been demonstrated to be effective in international studies without citing relevant RCTs or quasi-experimental studies to justify this point.
4. Does the existing evidence support the use of autonomous pharmacy prescribing for the ailments and chronic conditions listed in Appendix 2 of the research protocol (Appendix 6 of the final report)?	**4a. Limitations because of conditions evaluated**: The existing evidence from component 2 evaluates a limited number of conditions—namely, UTI, hormonal contraception and skin conditions. Of these, outcomes other than the number of services provided are only available from the Queensland UTI pilot.[51] Therefore, there is some evidence to inform community pharmacist prescribing for UTI, but insufficient research evidence to inform independent pharmacist prescribing across the full scope of conditions listed. As noted in component 1, given the diversity of clinical conditions, the outcomes (e.g. clinical effectiveness outcomes) from one condition do not necessarily apply to other clinical conditions. There remains a need to assess individual conditions as they are implemented. **4b. UTI outcomes:** There is some evidence to support independent pharmacist prescribing for UTI. In the Queensland UTI pilot[51], process outcomes were reported in terms of proportion of patients with an initial consult receiving antibiotics (96.6%) and guideline concordance (93.0%). Clinical and safety outcomes were reported in this evaluation but were limited by large numbers of patients lost to follow-up and potential bias in self-reported outcomes. Of the N=2973 (29%) patients followed up, UTI symptoms resolved in 87.6%, N=5 had ED or hospital visits at follow-up and N=85 had adverse events reported.
5. What are the limitations and gaps in the existing literature?	**5a. Publicly available information:** Across Australia, there is a gap in information about whether evaluations are planned, and where planned, a gap in publicly available evaluations. In addition to the publicly available evaluations (N=2, Qld and Vic)[51, 52], NSW/ACT have described an evaluation under way with no publicly available report. No evaluations are described for other states and territories. **5b. Limitations of service evaluations:** Current state-based evaluations are typically implementation and service evaluations conducted by the state or territory government implementing the initiative. Such evaluations are typically observational, without a comparator, and may not have adequate follow-up to fully consider clinical and safety outcomes. For example, the two existing evaluations have large losses to follow-up (Qld)[51] or no longitudinal follow-up data (Vic)[52], limiting interpretation of any data on clinical and safety outcomes. **5c. Limited clinical scope and setting of evaluations:** There is insufficient evidence from the evaluations assessed in component 2 to

	inform (support or refute) independent pharmacist prescribing policies across the full list of common and minor conditions in the community pharmacy setting. Only UTI has any outcomes reported, other than number of services provided. It would be inaccurate to consider this as sufficient evidence to inform implementation for the full list of common and minor conditions. The results available from outcomes available in the Queensland UTI evaluation[51] may not be generalisable to all settings across Australia. **5d. Limited outcomes, including economic outcomes:** The Victorian evaluation[52] included quantitative outcomes only in terms of number of services provided for each indication. In terms of health service outcomes, there were no Australian studies publicly available on costs or cost-effectiveness. This was also a notable gap in component 1, where only one modelling study has been done in the past five years to estimate cost savings related to independent pharmacist prescribing in community pharmacy settings.
6. What are the implications of the findings?	**6a. Transparent evaluation and reporting:** States and territories across Australia have implemented independent pharmacist prescribing in community pharmacy settings based on limited reported evidence. To support evidence-informed policy making, there is a need to make evaluation methods and results publicly available. Transparent conduct and reporting of evaluations is particularly relevant in the context of ongoing policy and professional debate. **6b. Robust study designs and adequate follow-up:** In addition to service evaluations, which are typically observational, there remains a need for independent research with academic rigour, e.g. RCTs or quasi-experimental studies. Proactively following up patients or using linked datasets would be useful to address the issue present in existing evaluations in terms of inadequate follow-up data. **6c. Evaluation across conditions and settings:** Noting that evaluation results from one clinical condition may not be directly applicable to a range of other clinical conditions, evaluations of independent pharmacist prescribing in community pharmacy settings need to be considered across a range of conditions in addition to the current evidence on UTI prescribing. There is also a gap in examining outcomes among specific population groups where implementation may differ—e.g. First Nations Australians, rural and remote populations and culturally and linguistically diverse communities. **6d. Type of outcomes reported:** The issue of evaluations reporting number of services or prescriptions delivered was present in both components 1 and 2. There remains a need to focus on meaningful clinical, health service and safety outcomes.

Discussion

Main findings

Component 1

The rapid review of the international literature for component 1 found:

- **A relatively small number of studies describing quantitative outcomes**

Our review included N=18 primary research articles. This stands in contrast to the larger established body of literature about pharmacist prescribing overall. Ali et al. (2026)[33] conducted an umbrella review of pharmacist prescribing—the umbrella review reported N=43 reviews (e.g. systematic reviews, rapid reviews) of pharmacist prescribing, which included both independent and other forms of pharmacist prescribing. The smaller number of articles included in our Evidence Check is likely due to exclusion of studies without quantitative clinical, health service and safety outcomes, as well as the restriction to studies published within the past five years. This includes survey-based and qualitative studies excluded during the rapid review screening process.

- **Improved access with limited evidence for other outcomes**

In general, the included studies describe increases in medication prescriptions as a result of independent pharmacist prescribing policies. There is limited evidence of some improvements in process outcomes, such as guideline-concordant prescribing. For other outcomes, the evidence is uncertain because of predominantly observational study designs and limited types of outcomes reported. Few studies investigated clinical, health service or safety outcomes.

- **Comparisons with previous reviews**
    - Overall, relatively few studies in the past five years evaluated clinical or safety outcomes using robust study designs such as RCTs; similarly, cost-effectiveness of independent pharmacist prescribing in the community setting was rarely evaluated. Many studies that have evaluated these outcomes were conducted more than five years ago.[79-87] Additionally, an international evidence review[88] not restricted by pharmacist prescribing model or time frame (i.e. encompassing studies published beyond the past five years) also found relatively few studies evaluating independent pharmacist prescribing in community pharmacy settings, with the majority of independent pharmacist prescribing studied in general practice settings, outpatient/ambulatory services and hospital-linked services.
    - Findings from this rapid review align with recent reviews within the community pharmacy context, which show that while community pharmacist independent prescribing is expanding, the evidence base remains limited and largely

descriptive. Across these reviews[24-26, 28], most studies report process measures such as prescribing volumes, service uptake and access, alongside qualitative findings on pharmacists' knowledge and experiences.

Component 2

The component 2 desktop review of grey literature documents related to independent pharmacist prescribing initiatives in Australian community pharmacy settings identified the following:

- **Time line of implementation in Australia**

Following the start of the Queensland UTI trial in 2020, community pharmacist prescribing initiatives have seen a rapid increase in scope, particularly in the number of conditions covered. As of 2026, all jurisdictions have announced rollouts of community pharmacist prescribing for common and minor conditions—approximately 20 conditions in total, with most conditions based on the list of conditions piloted in Queensland.

- **Pilots and evaluation status**

We found the initiatives across states and territories were variably described as pilots and trials. Only the NSW/ACT pilot was registered with ANZCTR as a clinical trial with ethics approval outlined. Queensland and Victoria described the initial phases of pharmacist prescribing as health service implementation pilots, without a clinical trial process. Queensland, however, did outline an ethics approval for the evaluation component. Other states appear to have implemented community pharmacist prescribing policies directly into usual care without an evaluation. At the time of writing, only Queensland and Victoria have publicly available evaluation documents.

- **Limited number of conditions evaluated**

The condition-specific assessment found a limited number of conditions considered for evaluation in Australian studies (UTI, hormonal contraceptives, skin conditions) relative to the larger number of common and minor conditions for implementation into usual care—approximately 20 with some variation between jurisdictions. There are only evaluation results publicly available for UTI in terms of clinical, health service and safety outcomes. Furthermore, the reliability of these results from the Queensland evaluation is limited because of an observational study design and loss to follow-up.

Strengths and limitations

- **Comprehensive and rigorous review**

Overall, the strength of our Evidence Check was that it was comprehensive, systematic and rigorous. For component 1, we were broad in our search strategy and inclusion criteria. We included not only RCTs and quasi-experimental studies, but also observational studies with longitudinal components. We recognised the diversity of outcomes possible for evaluation and

did not exclude based on predetermined outcomes. For both component 1 and component 2, two or more individual reviewers were involved in each step to reduce potential bias in screening, data extraction and quality appraisal of the published literature.

- **Limitations of the literature review**

There are several limitations to consider. The rapid review in component 1 was targeted to search the literature from the past five years to explore contemporary evidence. This potentially excludes relevant research outside of this study period. However, a similar review published in 2025 without date filters identified limited additional studies or initiatives in the community pharmacy setting.[88] While we included a wide range of common terms to capture the concept of independent pharmacist prescribing, it is possible the search strategy did not include relevant studies if the authors did not clearly describe the intervention as such in the title and abstract.

Given the focus on quantitative outcomes, we excluded cross-sectional surveys and qualitative study designs focused on pharmacist, patient and/or public perceptions of pharmacist prescribing. The review focused on high-income countries relevant to Australia and may not be generalisable to low- and middle-income countries. The intervention of interest was independent pharmacist prescribing models and we did not include studies focused solely on other prescribing models, such as collaborative and dependent prescribing models.

- **Limitations because of information availability**

For both Evidence Check components, we reported what was available in the public domain. In component 1 this meant full details of the intervention might not have been included if they were not reported in the publication—e.g. for education, registration and governance of each study. Similarly for component 2, we reported evaluations and outcomes that were publicly available, which necessarily did not include information from internal reports, or documents classified as not for public release.

Overall implications

- **Opportunity and uncertainties**

There is an opportunity to improve access to medications through independent pharmacist prescribing in the community pharmacy setting compared with the status quo, but substantial uncertainties exist both in international research and the Australian grey literature in terms of clinical effectiveness, safety and health service implications.

- **Limited evidence for the Australian setting**

There is limited evidence to inform the development of robust policy relating to independent pharmacist prescribing in the community pharmacy setting in Australia. Evaluation outcomes have been reported internationally but are not sufficient to cite as evidence for positive effectiveness or safety outcomes of independent pharmacist prescribing in the Australian community. This is because of weak study designs, the limited number of conditions evaluated, the limited health settings in which evaluations took place and the limited types of outcomes evaluated.

- **Transparent reporting required**

States and territories across Australia have implemented independent pharmacist prescribing in community pharmacy settings before public evaluation findings were fully available. At the time of writing, only Queensland and Victoria had publicly available evaluations for a limited number of conditions. Transparent conduct and reporting of evaluations are particularly relevant in the context of ongoing policy and professional debate.

- **Robust evaluations of wider scope required**

Evaluations alongside implementation of independent pharmacist prescribing interventions in community pharmacy settings in Australia should include study designs with a control group (e.g. RCT or quasi-experimental studies—pre–post with a control group) and key outcomes including clinical, health service (including costs) and safety outcomes. These high-quality evaluations would be important to conduct for a range of conditions implemented, and such evidence would contribute meaningfully to international evidence.

Conclusion

In recent years, independent pharmacist prescribing in community pharmacy settings has increasingly been implemented into usual care across Australia and comparable international settings. As of 2026, all states and territories in Australia have announced or started to roll out community pharmacist prescribing for a wide range of common and minor conditions.

While there is good evidence that pharmacist prescribing improves medication access, both international research and Australia-based evaluations are limited in terms of the number of evaluations conducted with quantitative outcomes. Of the small number of studies available in the past five years, most are based on weak study designs and report no clinical, health service (including economic) or safety outcomes. Furthermore, existing evaluations have targeted a limited set of conditions, the results of which may not apply more broadly to a wide range of common and minor conditions.

In Australia and internationally, there remains a need and opportunity for well-designed evaluations of quantitative outcomes for a range of conditions alongside the implementation of independent pharmacist prescribing policies. Transparent reporting of these outcomes will be important to ensure safe, high-quality patient care and positive health system outcomes in the future.

Appendices

Please note that appendices 3 to 6 are linked to as separate Excel documents.

Appendix 1—Component 1: Search strategy and results

Database 1—MEDLINE

MEDLINE (individual database search via OVID. Keyword and MesH term search).
OVID MEDLINE ALL 1946 to 10 April 2026
SEARCH DATE: 14 April 2026
YIELD = N=174 (Exported to Endnote)
SEARCH INPUTS

#	Domain	Search strategy using MeSH terms and keywords	Results
1	Population	Pharmacists/	N=24,987
2		Pharmacy, Community/	N=10,448
3		(community pharmac* or retail pharmac*).ti,ab.	N=12,281
4		Combination: 1 or 2 or 3	N=39,004
5	Intervention	Drug Prescriptions/	N=32,675
6		Prescriptive Authority/	N=0
7		Nonmedical Prescribing/	N=0
8		Non-medical Prescribing/	N=8
9		(independent prescrib* or autonomous prescrib*).ti,ab.	N=312
10		(pharmacist adj3 initiat* adj3 prescrib*).ti,ab.	N=13
11		(pharmacist adj3 diagnos* adj3 prescrib*).ti,ab.	N=2
12		(minor ailment* adj3 prescrib*).ti,ab.	N=27
13		(pharmacist* adj3 (prescrib* or prescriber* or prescribing)).ti,ab.	N=1643
14		prescriptive authority.ti,ab.	N=379
15		Combination: 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14	N=34,169
16	Setting	Pharmacy, Community/	N=10,448
17		(community or retail).ti,ab.	N=779,824
18		Hospital Pharmacy/	N=0

19		General Practice/	N=17,163
20		hospital pharmacy.ti,ab.	N=3038
21		hospital*.ti,ab.	N=1,935,091
22		general practi*.ti,ab.	N=99,367
23		Combination: 16 or 17	N=786,981
24		Combination: 18 or 19 or 20 or 21 or 22	N=2,022,368
25	Combine the three main concepts	Combination: 4 and 15 and 23	N=1660
26		Combination: 25 not 24	N=1333
27	Exclude clear irrelevant publication type	exp Review/	N=3,854,783
28		Editorial.pt.	N=754,154
29		Comment.pt.	N=1,063,615
30		Case Reports.pt.	N=2,546,228
31		Combination: 27 or 28 or 29 or 30	N=7,802,281
32		Combination: 26 not 31	N=1237
33	Language and year limits	Limit 1: limit 32 to (English language and humans)	N=940
34		Limit 2: limit 33 to yr="2021 -Current"	N=174
	Result	**Final yield**	**N=174**

Database 2—Embase

Embase (individual database search via OVID. Keyword and subject heading term search)
Embase Classic 1947 to 1973; Embase 1974 to 10 April 2026
SEARCH DATE: 14 April 2026
YIELD: **N=3085 (Exported to Endnote)**
SEARCH INPUTS

#	Domain	Search strategy using subject heading terms and keywords	Results
1	Population	Pharmacist/	N=112,774
2		community pharmacy/	N=88,419
3		(community pharmac* or retail pharmac*).ti,ab.	N=23,513
4		Combination: 1 or 2 or 3	N=177,880
5	Intervention	drug prescription/	N=311,875
6		prescribing/	N=9
7		nonmedical prescribing/	N=4
8		non-medical prescribing/	N=311,875
9		independent practice/	N=171,631
10		(independent prescrib* or autonomous prescrib*).ti,ab.	N=737
11		(pharmacist adj3 initiat* adj3 prescrib*).ti,ab.	N=28
12		(pharmacist adj3 assess* adj3 prescrib*).ti,ab.	N=29
13		(pharmacist adj3 diagnos* adj3 prescrib*).ti,ab.	N=5
14		(pharmacist* adj3 (prescrib* or prescriber* or prescribing)).ti,ab.	N=3536
15		(minor ailment* adj3 prescrib*).ti,ab.	N=74
16		Combination: 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15	N=474,678
17	Setting	community pharmacy/	N=88,419
18		retail pharmacy/	N=88,419
19		(community or retail).ti,ab.	N=999,553
20		Combination: 17 or 18 or 19	N=1,069,608
21		hospital pharmacy/	N=16,849
22		general practice/	N=94,676
23		hospital pharmacy.ti,ab.	N=6788
24		hospital*.ti,ab	N=3,216,413
25		general practi*.ti,ab.	N=133,672
26		Combination: 21 or 22 or 23 or 24 or 25	N=3,373,540

27	Combine the three main concepts, with setting exclusion	Combination: 4 and 16 and 20	N=24,411
28	Combination of the four main concepts, with setting exclusion	Combination: 27 not 26	N=18,757
29	Exclude clear irrelevant publication type	review/	N=3,292,491
30		editorial/	N=840,018
31		letter/	N=1,342,357
32		case report/	N=3,291,908
33		Combination: 29 or 30 or 31 or 32	N=8,428,182
34		Combination 28 not 33	N=15,803
35	Language and year limits	Limits: limit 34 to (English language and Human)	N=12,232
36		Limits: limit 35 to yr="2021 -Current"	N=3085
	Result	**Final yield**	**N=3085**

Database 3—CINAHL

CINAHL (Individual database search. Keyword and subject heading search)
CINAHL Ultimate database search via EBSCOhost, 1937 to current
SEARCH DATE: 14 April 2026
YIELD: **N=10 (exported to Endnote)**
SEARCH INPUTS

#	Domain	Search strategy using subject heading terms and keywords	Results
1	Population	MH "Patients"	N=11,171
2		MH "Patient Care"	N=46,684
3		MH "Community Pharmacy Services"	N=0
4		TI (patient* N3 (care OR treatment OR management)) OR AB (patient* N3 (care OR treatment OR management))	N=405,189
5		TI (receiv* N3 care) OR AB (receiv* N3 care)	N=40,071
6		TI ("minor ailment*" N3 service*) OR AB ("minor ailment*" N3 service*)	N=40
7		Combination: 1 OR 2 OR 3 OR 4 OR 5 OR 6	N=474,852
8	Intervention	MH "Prescriptive Authority"	N=5,987
9		MH "Prescription Drugs"	N=0
10		MH "Independent Practice	N=0
11		TI ("independent prescribing" OR "autonomous prescribing") OR AB ("independent prescribing" OR "autonomous prescribing")	N=248
12		TI (pharmacist* N3 initiat* N3 prescrib*) OR AB (pharmacist* N3 initiat* N3 prescrib*)	N=9
13		TI (pharmacist* N3 assess* N3 prescrib*) OR AB (pharmacist* N3 assess* N3 prescrib*)	N=42
14		TI (pharmacist* N3 diagnos* N3 prescrib*) OR AB (pharmacist* N3 diagnos* N3 prescrib*)	N=5
15		TI ("minor ailment*" N3 prescrib*) OR AB ("minor ailment*" N3 prescrib*)	N=14
16		(TI (pharmacist* N3 (prescrib* OR prescriber* OR prescribing)) OR AB (pharmacist* N3 (prescrib* OR prescriber* OR prescribing)))	N=1217
17		Combination: 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16	N=7102
18	Setting	MH "Community Pharmacy Services"	N=0
19		TI (community pharmac* N3 service*) OR AB (community pharmac* N3 service*)	N=949
20		TI (community OR retail) OR AB (community OR retail)	N=342,135

21		MH "Retail Clinics"	N=0
22		TI (retail clinic*) OR AB (retail clinic*)	N=339
23		MH "Pharmacy, Hospital"	N=0
24		TI (hospital pharmacy) OR AB (hospital pharmacy)	N=2554
25		TI (hospital*) OR AB (hospital*)	N=609,338
26		MH "General Practice"	N=0
27		TI (general practice) OR AB (general practice)	N=23,312
28		Combination: 18 OR 19 OR 20 OR 21 OR 22	N=342,135
29		Combination: 23 OR 24 OR 25 OR 26 or 27	N=629,809
30	Combine the three main concepts, with setting exclusions	Combination: 7 AND 17 AND 28	N=136
31		Combination: 30 NOT 29	N=32
32	Exclude clear irrelevant publication type	PT "Systematic Review"	N=189,990
33		PT "Editorial"	N=292,714
34		PT "Commentary"	N=358,424
35		PT "Case Study"	N=459,595
36		Combination: 32 OR 33 OR 34 OR 35	N=1,281,597
37		Combination: 31 NOT 36	N=32
38	Language and year limits	Limit: Limit 37 to English Language	N=32
39		Limit: Limit 38 to Publication Data: Past 5 years	N=10
	Result	**Final yield**	**N=10**

Database 4—Scopus

Scopus (keyword only search)
SEARCH DATE: 14 April 2026
YIELD: **N=30 (Exported to Endnote)**
SEARCH INPUTS

#	Domain	Search strategy using keywords	Results
1	Population	TITLE-ABS-KEY (patient* W/3 (care OR treatment OR management))	N=2,005,028
2		TITLE-ABS-KEY (receiv* W/3 care)	N=88,512
3		TITLE-ABS-KEY ("minor ailment*" W/3 service*)	N=90
4		Combination: 1 OR 2 OR 3	N=2,056,999
5	Intervention	TITLE-ABS-KEY ("independent prescribing" OR "autonomous prescribing")	N=321
6		TITLE-ABS-KEY (pharmacist* W/3 initiat* W/3 prescrib*)	N=31
7		TITLE-ABS-KEY (pharmacist* W/3 assess* W/3 prescrib*)	N=70
8		TITLE-ABS-KEY (pharmacist* W/3 diagnos* W/3 prescrib*)	N=15
9		TITLE-ABS-KEY ("minor ailment*" W/3 prescrib*)	N=30
10		TITLE-ABS-KEY (pharmacist* W/3 prescrib* OR prescriber* OR prescribing)	N=2547
11		Combination: 5 OR 6 OR 7 OR 8 OR 9 OR 10	N=2775
12	Setting	TITLE-ABS-KEY ("community pharmacy" OR "retail pharmacy")	N=16,252
13		TITLE-ABS-KEY (community W/3 pharmacy OR retail W/3 pharmacy)	N=16,093
14		Combination: 12 OR 13	N=17,188
15	Combine the three main concepts, with setting exclusions	Combination: 4 AND 11 AND 14	N=145
16		TITLE-ABS-KEY (hospital* OR "general practice" OR "family practice" OR "primary care clinic")	N=3,531,929
17		Combination: 15 NOT 16	N=99
18		Limit: LIMIT 17-TO (LANGUAGE, "English" and “Human”)	N=92
19		Limit: LIMIT 19-TO (PUBYEAR, 2021–2026)	N=30
	Result	**Final yield**	**N=30**

Appendix 2—Component 1 and 2: Critical appraisal results using JBI checklists

Component 1

1a. JBI 2017 Critical appraisal checklist for RCTs

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Sandhu 2024	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
%Y	100%	0%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%

1b. JBI 2017 Critical appraisal checklist for quasi-experimental studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Al Hamarneh 2021	Y	Y	N	N	N	U	Y	Y	Y
Bacci 2023a	Y	N	N	Y	N	U	U	Y	Y
Bacci 2023b	Y	U	U	Y	N	U	Y	N	Y
Bell 2025	Y	U	U	N	Y	Y	Y	Y	U
Leung 2025	Y	N	U	N	Y	U	Y	Y	Y
Qato 2024	Y	U	N	Y	Y	Y	Y	Y	Y
Teeter 2021	Y	U	U	Y	Y	U	Y	U	U
%Y	43%	14%	0%	57%	57%	29%	86%	71%	71%

1c. JBI 2017 Critical appraisal checklist for cohort studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Ahmad 2022	N/A	N/A	Y	N	N	N/A	Y	Y	U	U	N
Beahm 2021	N	Y	Y	U	N	Y	Y	Y	Y	N/A	U
Grant 2023	N/A	N/A	Y	U	U	N/A	Y	Y	Y	N/A	N
Hill 2025	N/A	N/A	Y	N	N	N/A	Y	Y	Y	N/A	N
O'Connor 2026	N/A	N/A	Y	N	N	N/A	Y	Y	U	U	N
Skoy 2021	N/A	N/A	Y	N	N	Y	Y	Y	U	U	N
%	0%	17%	100%	0%	0%	33%	100%	100%	50%	0%	0%

1d. JBI 2017 Critical appraisal checklist for cross-sectional studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Davis 2025	Y	Y	U	N	N	N	N	N
Mantzourani 2022	Y	Y	Y	Y	U	N	Y	U
Xu 2021	Y	Y	U	U	Y	Y	Y	U
%	100%	100%	33%	33%	33%	33%	67%	0%

1e. JBI 2017 Critical appraisal checklist for economic evaluation studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Kim 2021	Y	Y	U	N	U	Y	N/A	Y	Y	N	Y
%Y	100%	100%	0%	0%	0%	100%	0%	100%	100%	0%	100%

Component 2

2a. JBI 2017 Critical appraisal checklist for cohort studies

Evaluation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Qld evaluation (UTI)	N	N	Y	N	N	Y	U	Y	N	N	U

2b. JBI 2017 Critical appraisal checklist for cross-sectional studies

Evaluation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Vic evaluation	Y	U	U	Y	N	N	U	N

Critical appraisal checklists

Copies of the critical appraisal checklists used for the appraisal process are included below.

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JBI Critical Appraisal Checklist for Randomized Controlled Trials

Reviewer_____Date_____.

Author _____Year_____Record Number_____.

		Yes	No	Unclear	NA
1.	Was true randomization used for assignment of participants to treatment groups?	☐	☐	☐	☐
2.	Was allocation to treatment groups concealed?	☐	☐	☐	☐
3.	Were treatment groups similar at the baseline?	☐	☐	☐	☐
4.	Were participants blind to treatment assignment?	☐	☐	☐	☐
5.	Were those delivering treatment blind to treatment assignment?	☐	☐	☐	☐
6.	Were outcomes assessors blind to treatment assignment?	☐	☐	☐	☐
7.	Were treatment groups treated identically other than the intervention of interest?	☐	☐	☐	☐
8.	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	☐	☐	☐	☐
9.	Were participants analyzed in the groups to which they were randomized?	☐	☐	☐	☐
10.	Were outcomes measured in the same way for treatment groups?	☐	☐	☐	☐
11.	Were outcomes measured in a reliable way?	☐	☐	☐	☐
12.	Was appropriate statistical analysis used?	☐	☐	☐	☐
13.	Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

THE JOANNA BRIGGS INSTITUTE

JBI Critical Appraisal Checklist for Quasi-Experimental Studies (non-randomized experimental studies)

Reviewer_____Date_____

Author _____Year_____Record Number_____

		Yes	No	Unclear	Not applicable
1.	Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	☐	☐	☐	☐
2.	Were the participants included in any comparisons similar?	☐	☐	☐	☐
3.	Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	☐	☐	☐	☐
4.	Was there a control group?	☐	☐	☐	☐
5.	Were there multiple measurements of the outcome both pre and post the intervention/exposure?	☐	☐	☐	☐
6.	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	☐	☐	☐	☐
7.	Were the outcomes of participants included in any comparisons measured in the same way?	☐	☐	☐	☐
8.	Were outcomes measured in a reliable way?	☐	☐	☐	☐
9.	Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

THE JOANNA BRIGGS INSTITUTE

JBI Critical Appraisal Checklist for Cohort Studies

Reviewer_____Date_____

Author _____Year_____Record Number_____.

	Yes	No	Unclear	Not applicable
1. Were the two groups similar and recruited from the same population?	☐	☐	☐	☐
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were confounding factors identified?	☐	☐	☐	☐
5. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?	☐	☐	☐	☐
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?	☐	☐	☐	☐
10. Were strategies to address incomplete follow up utilized?	☐	☐	☐	☐
11. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

THE JOANNA BRIGGS INSTITUTE

JBI Critical Appraisal Checklist for Analytical Cross Sectional Studies

Reviewer_____Date_____

Author _____Year_____Record Number_____.

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

THE JOANNA BRIGGS INSTITUTE

JBI Critical Appraisal Checklist for Economic Evaluations

Reviewer_____Date_____.

Author _____Year_____Record Number_____.

		Yes	No	Unclear	Not applicable
1.	Is there a well-defined question?	☐	☐	☐	☐
2.	Is there comprehensive description of alternatives?	☐	☐	☐	☐
3.	Are all important and relevant costs and outcomes for each alternative identified?	☐	☐	☐	☐
4.	Has clinical effectiveness been established?	☐	☐	☐	☐
5.	Are costs and outcomes measured accurately?	☐	☐	☐	☐
6.	Are costs and outcomes valued credibly?	☐	☐	☐	☐
7.	Are costs and outcomes adjusted for differential timing?	☐	☐	☐	☐
8.	Is there an incremental analysis of costs and consequences?	☐	☐	☐	☐
9.	Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or consequences?	☐	☐	☐	☐
10.	Do study results include all issues of concern to users?	☐	☐	☐	☐
11.	Are the results generalizable to the setting of interest in the review?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

Appendices 3—6 are linked to separate Excel documents.

- **Appendix 3—Component 1: Full data extraction table for international research on independent pharmacist prescribing in community pharmacy settings**

- **Appendix 4—Component 2: Inventory of grey literature documents about independent pharmacist prescribing in community pharmacy settings in Australia**

- **Appendix 5—Component 2: Full data extraction table for grey literature about independent pharmacist prescribing in community pharmacy settings in Australia**

- **Appendix 6—Component 2: Full condition-specific assessment table**

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